Do Family Businesses "Pay It Forward"?

Seeking to Understand the Relationship Between Intergenerational Behaviour and Environmentally Sustainable Business Practices

by

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ABSTRACT

Family business research has explored a number of important questions related to the complexity of intra-organizational family-based involvement (Sharma, 2004; Sharma, Hoy, Astrachen & Koiranen, 2007; Debicki, Matherne III, Kellermanns & Chrisman, 2009; Litz, Pearson & Litchfield, 2011), but the possibility of a potential link between the intentions and actions to facilitate or pursue the voluntary sacrifice by the current generation for generations still to come has largely gone unexplored. I seek to further explore how one's intention and action to eventually pass an enterprise on to the next generation of family potentially influences how one manages that enterprise in the present. I conducted the research using a cross-sectional survey of 218 Manitoba family farms in 2011 to 2012. The data were collected in both an on-line and paper format.

I have tested my hypotheses in the Manitoba family farm community to confirm a positive relationship between family farm succession strategy and environmental behaviour while controlling for industry specific measures. The proposed moderators of industry context (resource munificence) and familial context (intergenerational affinity) were not significant. The results provide further support to the notion that within the family business context, succession strategy and environmental behaviours are connected to intergenerational beneficence as "the extent to which members of the present generations are willing to sacrifice their own self-interest for the benefit of future others in the absence of economic or material incentives to present actors for doing so" (Wade-Benzoni & Tost, 2009:166).

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A society grows great when old men plant trees whose shade they know they shall never sit in.
Greek Proverb

1. The Question: Does one's ownership intention to "pass the business on to family" *tomorrow* influence how one manages the business *today*?

1.1. Introduction

How does one's intention to eventually pass an enterprise on to the next generation of family influence how one manages that enterprise in the present? At one extreme, the presence of such intentions could make virtually no difference; business is business, family is family, and "ne'er the twain shall meet". However, another response is also possible; namely, that the intention to hand over the business to family could encourage the practice of intergenerational beneficence. Intergenerational beneficence is "the extent to which members of the present generations are willing to sacrifice their own self-interest for the benefit of future others in the absence of economic or material incentives to present actors for doing so" (Wade-Benzoni & Tost, 2009:166).

Family business is best defined by its essence, which is made up of (1) a family's vision for the firm and (2) the intention of the family decision makers to shape and pursue that vision (Chua, Chrisman & Sharma, 1999). In order to capture this intersection of family, ownership and business management, I use Brun de Pontet, Wrosch and Gagne's (2007) definition of family business as one that is owned and managed by the same family; where at least one family member operates the business and another from the next generation is being considered for the future leadership of the business. While family business research has explored a number of important questions related to the complexity of intra-organizational family-based involvement

(Sharma, 2004; Sharma, Hoy, Astrachen & Koiranen, 2007; Debicki et al., 2009; Litz, Pearson & Litchfield, 2011), this possibility, of a potential link between the *intentions* and *actions* to facilitate or pursue intergenerational firm-related continuity and voluntary sacrifice by the current generation for generations still to come, has largely gone unexplored.

1.2. Relevance of this research: Implications of succession intentions and actions for intergenerational continuity of the firm and the environment

It is quite natural when discussing family business for one to seek out and attempt to draw comparisons between family and non-family enterprises. But, as I am more interested in looking at the specific aspects related to intergenerational succession within the family business context and how this potentially affects operational decisions, my research is confined to a 'within family business' focus. Matters of succession are integral to the family business both surviving and thriving.

The question of the connection between succession intent and action and proactive management practices is relevant for several reasons. The first reason arises from the predominant tendency of the family firm to often prioritize intergenerational continuity; that is, family firms frequently place a high value on keeping the enterprise "in the family". While this reason may help explain the unique qualities of the family enterprise, it may also clarify the motivation for specific expectations, behaviours and performance (Ibrahim & Lam, 2001; Ibrahim, Soufani, Poutziouris & Lam, 2004; De Massis, Chua & Chrisman, 2008). More specifically, the presence of such a "familiocentric" priority could have significant implications for how the enterprise is managed, insofar as the present generation could conceivably be more willing to incur greater sacrifice in the short term to eventually benefit their descendants in the long term.

Furthermore, if the intention is to maintain ongoing family involvement in organizational ownership and/or management, and actions have been put in place to facilitate this transition, what might this approach mean for how organizational performance is operationalized? For example, would organizational performance be assessed more holistically and longitudinally from a multi-generational perspective? Managing by *generations* and not solely by conventional business performance metrics, such as quarterly financial results, may have positive implications given concerns about the organization's long-term viability and environmental sustainability (Astrachan, Klein & Smyrnios, 2002; Olson, Zuiker, Danes, Stafford, Heck & Duncan, 2003; Masurel, 2007; Basu & Palazzo, 2008; Burton & Goldsby, 2009; Berrone, Cruz, Gomez-Mejia & Larraza-Kintana, 2010). More specifically, this type of orientation may have practical implications for day-to-day operational decisions insofar as the current generation takes the future generations' interests into account. In particular, it may result in one generation "giving up something" for the next generation to "have something". This research therefore seeks to extend the research literature on family business by exploring whether, and under what conditions, elder generations sacrifice for younger generations.

A second reason relates to the specific form such sacrifice might take and pertains to the challenge of environmental sustainability (Goodland, 1995; Jenkins, 2006; Masurel, 2007). As myriad voices attest, "maintaining the status quo" is becoming increasingly unsustainable and changes are progressively necessary for human existence to be sustained (Lynch, 2001; Vogel, 2005). Given that changes are needed, might family-intensive organizations have a special and distinct reason for proactively engaging in environmentally sustainable management practices that go beyond minimal legal compliance? Simply said, might managers be more willing to enact more significant environmental responses given the intention to hand over the enterprise to their

family? Accordingly, this research seeks to expand the literature on environmental sustainability (Goodland, 1995; Uhlaner, vanGoor-Balk & Masurel, 2004; Masurel, 2007) by exploring the relationship between family-directed succession intentions and actions (Litz, 1995), and environmentally sustainable management practices (Ajzen, 1991; Fairweather & Campbell, 2003; Thomas, 2005; Sharma & Sharma, 2011).

Third and finally, these questions of intergenerational behaviour are important for ensuring the family legacy survives. The idea of leaving a family legacy is often very important to family business owners (Penrose, 1959; Baker & Wiseman, 1998; Kelly, Athanassiou & Crittenden, 2000; Miller, Steier & Le Breton-Miller, 2003; Lockett, 2005). It is one of the qualities that potentially distinguish family businesses from other businesses, insofar as the interests of the family and business are intertwined (Litz, 2008). Business performance, environmental stewardship, and the extent of a legacy for succeeding generations may reflect the family's values and aspirations. Legacy-related intentions may, therefore, have the potential to influence the day-to-day management decisions. More specifically, the current family business owner who desires to have his/her family name and positive reputation carry through to succeeding generations may institute management practices that will achieve those legacy objectives. As such, this research attempts to develop family legacy as an important construct to be considered when researching family business succession. The relevance of this research and its application to the family business context seems especially appropriate to be explored in the family farm setting. The rationale for this particular family business environment will be discussed further in Chapter 4.

In summary, my dissertation research focuses on the primary question of succession intention and action in family-intensive business contexts. More specifically, I consider the following three research questions.

1.3. Three research questions

1.3.1. Managing for family succession – *"Are family businesses managed differently when there is intent to continue family involvement?"*

Researchers indicate that with each successive generation, it becomes increasingly difficult to succeed as a family business (Ward, 1987; Davis & Harveston, 1998; Brockhaus, 2004). There appears to be some interesting dynamics at work between family intentions and actions to hand the business over to the next generation and the long-term sustainability of the enterprise. Insofar as the character of the family business is defined by its intention (Litz, 1995; Chua, Chrisman & Sharma, 1999; Astrachan, Klein & Smyrnios, 2002), it is useful to understand what the intentions might entail, how they have been translated into specific succession practices, and how they may impact on management routines. In light of succession activities, the challenges in business are increasingly intergenerational where one generation's choices affect the future generation's outcomes. Realizing that only a small percentage of family businesses succeed as multi-generational enterprises prompts us to consider the question: *Do owners of family enterprises manage differently when they intend to hand the enterprise over to their family?* – Research Question 1[1]

[1] Research Question hereafter designated as "RQ"

1.3.2. Intergenerational behaviour in the family business – *"How do multiple generations behave towards each other when planning for the future of the firm?"*

As I have suggested, the intention to pass ownership on to future generations potentially provides family businesses with a fundamentally different intergenerationally-focused *raison d'etre*. In researching aspects of intergenerational behaviour, some key constructs have been operationalized to help us measure specific attitudes that serve as proxies for determining predicted behaviours (Wade-Benzoni, 2002, 2003, 2008; Wade-Benzoni, Hernandez, Medvec & Messick, 2008; Wade-Benzoni & Tost, 2009; Wade-Benzoni, Sondak & Galinsky, 2010). For example, in regards to resource consumption, "intergenerational beneficence" is a measure of how one generation considers the well-being of future generations before taking action (Wade-Benzoni & Tost, 2009). In contrast, "intergenerational discounting" is disregarding the consequence of one's actions for future generations (Wade-Benzoni, 2002; Wade-Benzoni et. al, 2008). While these constructs have been tested in lab studies relating to environmental sustainability, they have not been applied in the arena of practical management choices pursued within a family business. Hence, my second research question: *How do the intergenerational constructs of intergenerational beneficence and intergenerational discounting function within the family business context when the intention is to hand the business over to future generations?* – RQ2

1.3.3. Intergenerational influence on practices of environmentally sustainability – *"How is family business-related intergenerational intentionality associated with the likelihood of enacting environmentally sustainable management practices?"*

There is increasing pressure on businesses, coming from a variety of sources that include regulators, special interest groups and customers, to ensure businesses employ environmentally sustainable practices (Bromley, 2007; Jordan, Hayes, Yoskowitz, Smith, Summers, Russell & Benson, 2010; Wiesner et al., 2010). However, given the family enterprise's hypothesized differential *raison d'etre*, might family businesses have a greater propensity to employ environmentally sustainable practices, particularly when they intend to hand their enterprise over to the next generation of family members? Hence my dissertation's third question: *How is intergenerational intentionality associated with present business decisions to engage in environmentally sustainable management practices that go beyond minimal legal compliance?* – RQ3

These research questions and how they are related to the relevant streams of literature are presented graphically in Figure 1.1 (all referenced figures and tables appear at the end of the chapter in which they are referenced).

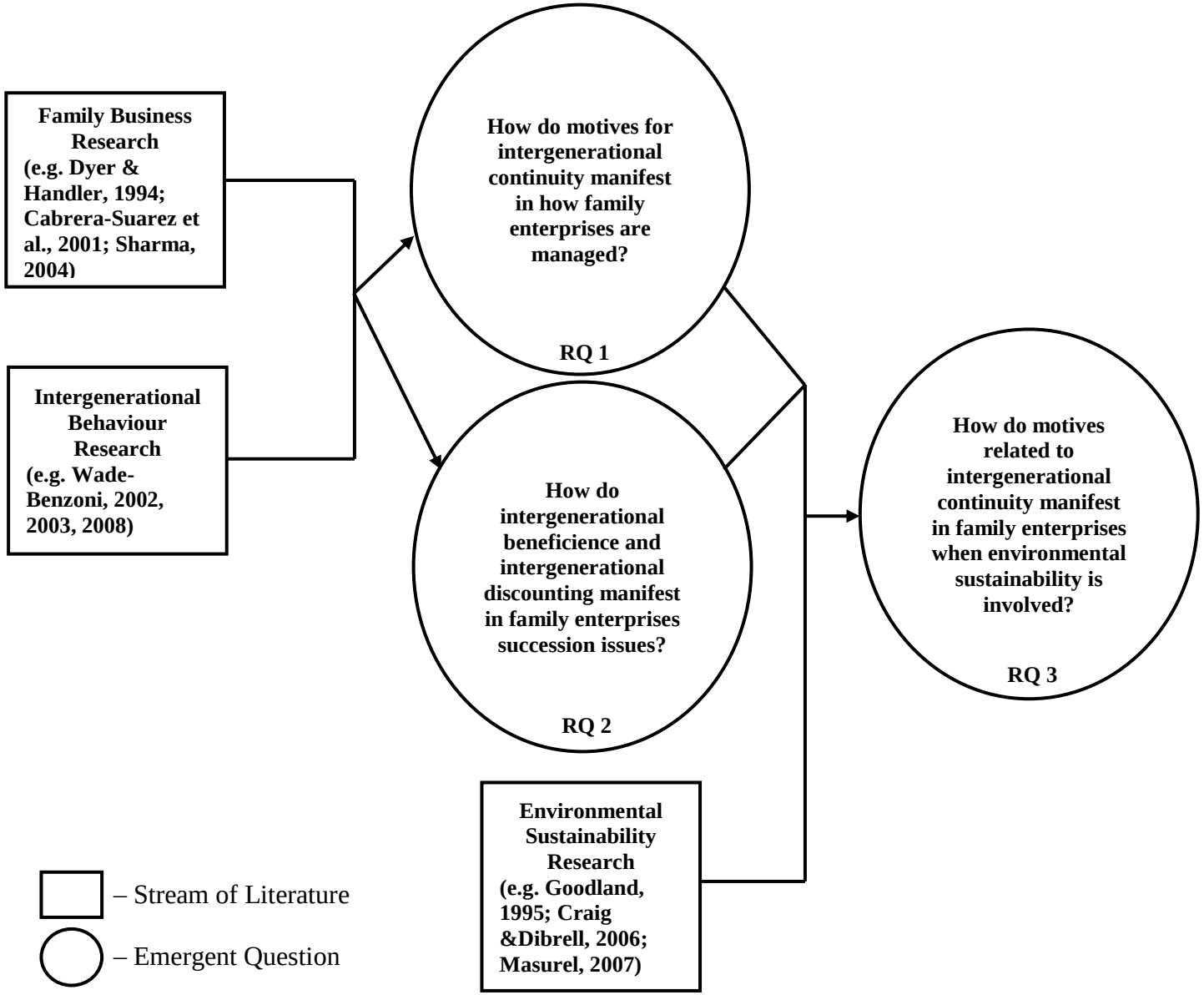
1.4. Conclusion

This research initially begins with the consideration of how the intention and action to hand the business over to family influences the management of that business. This connection between intention and action leads to examining the role of intergenerational behaviour for the ongoing success of the firm. This study was developed to investigate the nature of succession-related intention and its influence over the issue of managing environmental sustainability. This

proposed relationship will be addressed by providing theoretical and practical insight concerning the role of intergenerational behaviour in family enterprises.

This chapter has provided the initial introduction to the topic addressed in this dissertation. It also highlights the primary rationale for the relevance of this investigation and identifies the three research questions to be addressed through the research. Chapter Two reviews the relevant streams of literature that frame this inquiry. The selected literature focuses on family firm succession, intergenerational behaviour and environmental sustainability. Chapter Three details the theoretical framework and hypotheses the dissertation seeks to test vis-à-vis the three research questions identified in Chapter One. Chapter Four outlines the methodology used in testing the hypotheses developed in Chapter Three. Chapter Five reports the analysis carried out on the data collected through the methodology described in Chapter Four. Chapter Six returns to the study's primary three questions, and drawing on empirical findings, proposes answers for each, and discusses the wider theoretical implications.

Figure 1.1 - A graphic representation of the proposed model and research questions



2. Literature Review

This study draws on three areas of inquiry. The first research stream focuses on family business succession. The second stream concerns intergenerational behaviour, while the third area involves research work in environmental sustainability. I review the existing work to identify specific gaps in the academic research and set the stage for addressing several unresolved questions. In the chapter that follows, I draw on this research to respond to my research questions and develop testable hypotheses concerning how owners of family enterprises behave when they intend and act to hand the enterprise over to their family, with special emphasis on environmentally sustainable management practices.

2.1. Family business succession strategy

The area of family business research continues to expand (Westhead & Cowling, 1998; Debicki et al., 2009; Litz, Pearson & Litchfield, 2011). It has become more sophisticated (Bird, Welsh, Astrachan & Pistrui, 2002; James, Jennings & Breitkreuz, 2011) with specific academic journals (Chrisman, Chua, Kellermanns, Matherne & Debicki, 2008) investigating family business strategies from different perspectives, disciplinary backgrounds and particular behavioural research perspectives (Astrachan & Pieper, 2010; JFBM, 2011).The academic community has recognized this research for its potential contribution to the overall knowledge of entrepreneurship and business management (Stewart & Miner, 2011).

There has been an ongoing deliberation regarding the definition of family business. The debate as to how best to define family business continues (Chua, Chrisman & Sharma, 1999), but for the purpose of this dissertation, I define a family business as one that is owned and managed by the same family; where at least one family member operates the business and another from

the next generation is being considered for the future leadership of the business (Brun de Pontet, Wrosch & Gagne, 2007).

Beyond the consideration of what constitutes a family business, a primary area of research continues to be focused on family business succession (Gersick, Davis, McCollom Hampton & Lansberg, 1997; Sharma, 2004; Chrisman, Chua & Sharma, 2005; Chrisman, Kellermanns, Chan & Liano, 2009; Debicki et al., 2009). Since it is the context in which family and business are inseparably connected as interdependent constructs (Stafford, Duncan, Danes & Winter, 1999; Aldrich & Cliff, 2003; Olson et al., 2003; Bertrand & Schoar, 2006; Chrisman, Sharma & Taggar, 2007; Litz, 2008), issues of family business succession have become even more challenging and complex. However, in the mind of the family business owner, the complexity of these relationships has the potential to generate significant anxiety and questions about how best to protect "the golden goose" which has supported the family for many years (Cohn, 1990; Barach & Ganitsky, 1995; Gersick et al., 1997; Gersick, Lansberg, Desjardins & Dunn, 1999; Murray, 2003). In many cases, issues of succession are avoided so as not to raise difficult questions (Lansberg, 1988). Such evasion notwithstanding, researchers and practitioners alike have sought to more fully address factors of succession and commitment since it is so vital to the future prospects of the family enterprise (Ward, 1987; Lynch, 2001; Sharma & Irving, 2005).

2.1.1. Background: Defining succession as process

Succession in family business refers to the process of having the next generation active in leadership and direct management to maintain family firm survival and character (Barach & Ganitsky, 1995). Stated more simply, it is when family businesses "transfer ownership and leadership from the senior generation to the junior generation" (Murray, 2003:17).

Understanding the broad implications of this process for all stakeholders requires research from multiple perspectives—that is, family, management and ownership systems (Gersick et al., 1999)—to understand the nature of successful management and ownership transfer (Brockhaus, 2004).

Succession is typically understood as encompassing a variety of activities, including (1) selecting a successor (Ward, 1987), (2) managing family member relationships (Hollander & Bukowitz, 1990; Dumas, 1992; Lansberg & Astrachan, 1994; Dunn, 1999), (3) transferring responsibilities (Grote, 2003), (4) planning ahead (Lynch, 2001), (5) dealing with the roles of family and employees (Chittoor & Das, 2007), and (6) minimizing the stigma of nepotism (Stewart, 2003). The combination of activities is inherently complex insofar as they impact the economic and non-economic well-being of both the firm and family (Tagiuri & Davis, 1992; Debicki et al., 2009).

2.1.2. Family-based succession: The core challenge

A central factor for many of the non-economic succession issues is the relationship between incumbent and successor (Sharma, Chua & Chrisman, 2000). At its essence, "successful succession" means the incumbent is ready to step aside with a competent successor prepared to step in. Individual family members often represent different generations and different life stages (Davis & Tagiuri, 1989). These potentially varying perceptions can make intergenerational continuity more challenging to harmonize. Related to this challenge, researchers have reiterated that both incumbent and successor need to work at the knowledge transfer process (Cabrera-Suárez, De Saá-Pérez & García-Almeida, 2001).

On one hand, the *incumbent* needs to appreciate both the successor's achievements and accept the possibility of new management approaches. The relinquishing generations need to

understand how best to exit the business or as Lambrecht (2005:278) describes it, to become "masters in the art of letting go". On the other hand, *successors* must acknowledge the value of the incumbent's accumulated knowledge and contribution to the firm, and not simply disregard the established work methods and consolidated practices. Understandably, succession research reveals the best practices of an emphasis on the initial phase of entry as a training period for the next generation (Mazzola, Marchisio & Astrachan, 2006).

Just as one can learn from research on "successful succession", one can also benefit from understanding what prevents succession from taking place. De Massis, Chua and Chrisman (2008) found that succession is prevented when (1) successors decline to take over, (2) incumbent owners reject the potential successor, and (3) incumbent owners decide against family succession, even though successors exist. It was also found that in such an emotionally charged context, "rational" decision-making is not always present or easily realized (Lansberg, 1988). Knowledge of the factors that prevent succession reinforces the importance of being prepared and engaged when planning for succession.

2.1.3. Succession intention and planned behaviour

The intention for family ownership to continue into succeeding generations needs to be apparent in the management behaviour of *both* generations (Brun de Pontet, Wrosch & Gagne, 2007). *Intention* here is defined as the "the state of mind with which an act is done; a determination to act in a certain way; purpose; aim; end" (Merriam-Webster, 2003:651). The succession research emphasizes that *both* the incumbent's and the successor's intentions need to be considered. Therefore, given the intention for intergenerational succession, what behaviours might be produced from these intentions as they relate to how the family enterprise is managed?

According to the theory of planned behaviour (Azjen, 1991), the probability of actual succession behaviour occurring is dependent upon the intentions of the individual engaging in succession activities (Sharma, Chrisman & Chua, 2003a). In other words, one's intention precedes behaviour. A successful intergenerational transition is then characterized by (1) the willingness of the successor to take over, (2) a harmonious relationship between the incumbent and successor, and (3) the continued profitability of the firm (Venter, Boshoff & Mass, 2005). The incumbent still has a significant role during and after the instalment of the successor (Cadieux, 2007). Therefore, *both* the incumbent and successor must desire to keep the business in the family and, moreover, work toward the same end purposes in both business and family relationships. Actions are required that go beyond simply preserving the family firm and name. Whereas succession spans multiple generations, this dissertation's focal question is how intention for family succession impacts decisions the senior generation makes in the present. This question is related to the succession process, but is essentially a parallel topic that takes us beyond extant family business research (Zahra & Sharma, 2004; Litz, Pearson & Litchfield, 2011).

2.1.4. Strategy requires intention and action

As indicated by Azjen (1991) and Sharma, Chrisman and Chua (2003a), behaviour follows intention. This is a critical principle that is underscored by Drucker (1974, 2008) in his work on the tasks, responsibilities and practices of management. Furthermore, the behaviour-intention relationship is underscored by his statement that "the best plan is only good intentions unless it leads into work. What makes a plan capable of producing results is the commitment of key people to work on specific tasks. The test of a plan is whether management actually commits resources to action that will bring results in the future. Unless such commitment is made, there

are only promises and hopes, but no plan" (Drucker, 2008:127). There are a number of strategic factors that are required in the present, and not just in the unspecific future, if long-range strategic planning is to be effective. These include (1) the need for decisions, (2) risk, (3) action, (4) the allocation of resources, and (5) work.

More specifically, Drucker identifies strategic planning as an activity that "deals with the futurity of present decisions" (1974:125). But, unless a specific task is organized, it is unlikely to be completed purposefully. The test of planned intention is whether ownership actually commits the necessary resources to action to bring about future results. "The best plan is only good intentions unless it leads into work. What makes a plan capable of producing results is the commitment of key people to work on specific tasks" (Drucker, 2008:127). Here work implies someone *actually* doing the task and also having in place one or more accountability mechanisms, a deadline, and the measurement of results. Therefore an intentional succession strategy for the *future* has to generate specific succession actions in the *present*.

2.1.5. The emerging issue: Succession across the generations

The research to date that has identified factors, either leading to successful succession or its prevention, provides a good foundation upon which to build. In addition to underscoring the critical nature of the incumbent-successor relationship, well-functioning family firms have also been characterized as "managing for the long run" (Miller & Le Bretton-Miller, 2007). This management philosophy is transformed into specific component priorities whereby the enterprise (1) favours a substantive mission beyond profitability, (2) embraces strong values in selecting and training people, (3) prefers long-term stakeholder relationships, and (4) uses courageous governance that invests for the long run. But, how do these management decisions align with the non-economic goals (Debicki et al., 2009) of family succession? More specifically, how does the

intention to have future generations of family assume ownership relate to the strategic business decisions that guide business performance behaviour? To better understand these core dynamics, I now turn to recent work on intergenerational behaviour.

2.2 The nature of intergenerational behaviour

The previous discussion on family business succession raised the primary question: How does the current generation manage the business in the *present* if it intends to hand the business over to the next generation in the *future*? The research work by Wade-Benzoni and colleagues on intergenerational behaviour (Wade-Benzoni, 2002; 2003; Wade-Benzoni, Hernandez, Medvec & Messick, 2008; Wade-Benzoni, 2008; Wade-Benzoni & Tost, 2009; Wade-Benzoni, Sondak & Galinsky, 2010) is relevant here as it provides insight on how one generation behaves when it is aware that its actions impact on the next generation.

2.2.1 Intergenerational beneficence and intergenerational discounting defined

Building on prior philosophical and economic approaches to examining intergenerational issues, Wade-Benzoni has systematically explored "factors that affect the extent to which the present generation *will* act on the behalf of future generations" (2002:1011). Figure 2.1 presents a graphic illustration of selected intergenerational research constructs.

Wade-Benzoni's (2002) initial research on intergenerational behaviour emphasized how the perceived generosity of *prior* generations affected the beneficence of the *present* generation toward *future* generations. Building on these primary concepts, subsequent experimental research explored a variety of decision-making scenarios as perceived by the present and future generations. These revealed the presence of self-serving biases when making judgments of fairness (Wade-Benzoni et al., 2008). This outcome, referred to as the "egocentric interpretation of fairness" (Wade-Benzoni & Tost, 2009), explains that people justify allocating more of a

limited resource to themselves relative to others on the basis of fairness. In contrast, most societies display a moral obligation toward future generations whereby positive outcomes for future generations are valued (Kempton, Boster & Hartley, 1995; Wade-Benzoni & Tost, 2009). In attempting to understand these seemingly contradictory attitudes, one needs to consider, "How do we account for this generous behaviour between generations?" Therefore the essence of intergenerational behaviour research centres on two primary constructs: (1) intergenerational beneficence and (2) intergenerational discounting.

The degree of *intergenerational beneficence* is determined by the extent to which members of the present generation are willing to sacrifice their own self-interest for the benefit of "future others" in the absence of current economic or material incentives for themselves (Wade-Benzoni & Tost, 2009). Beneficent behaviour is influenced or characterized by the (1) levels of power asymmetry between current actors and future others, (2) absence of direct reciprocity across generations, (3) divergence of interests of current actors and future others, (4) time delay between actions and outcomes, and (5) role transition from one generation to the next. Coupled with these *intertemporal* (actions in the present affecting outcomes in the future) and *interpersonal* (actions of one person or group affecting outcomes for another person or group) dimensions is the influence of a self-serving bias, which tends to encourage preferential treatment for the decision-making generation. Given these factors, one would expect that beneficent behaviour would be limited.

The research on how resources are allocated across generations is further clarified by measuring degrees of *intergenerational discounting*. This action is the preference for smaller, highly probable benefits for *oneself* in the *present* compared to relatively larger, but less certain, benefits for *others* in the *future* (Wade-Benzoni, 2008). The amount any particular resource is

discounted reflects how much the interests of future generations are represented in current decisions. The degree of discounting can be measured by the extent to which decisions favour gaining a benefit, or avoiding a burden, for *oneself* in the *present*, over gaining a larger benefit, or avoiding a larger burden, for *others* in the *future*.

It may be useful to illustrate discounting by way of an analogy. In the world of finance, the corporate discount rate is used to determine the present value of future cash flows (Droms & Wright, 2010). A higher rate means the future is presently seen as less valuable whereas a lower rate means the future is seen as more valuable. With intergenerational behaviour, discounting reflects how much the interests of future generations are considered in current decisions and can be measured by determining the extent to which decisions benefit oneself in the present over others in the future. "Generally, the greater the discount rate, the less future benefits count when compared with present costs" (Wade-Benzoni, 2008:227).

But as a counter-balance, perceived uncertainty and power asymmetry also play a role in eliciting stewardship attitudes (Wade-Benzoni et al., 2008). More specifically, where there are high degrees of uncertainty about future consequences of present decisions, or when people are given a position of power, they become more focused on how others are affected by their decisions. For example, when there is greater uncertainty regarding the impact of decisions by the preceding generation on the succeeding generation, the preceding generation judges it as fair to allocate greater resources to the succeeding generation. In terms of power asymmetry, where the present generation has complete unilateral decision-making power and the future generation has no voice, the feeling leads people with power to consider the powerlessness of the future generation and therefore become concerned about how others are impacted by their decisions.

These studies reveal how the degree of self-interest is tempered by uncertainty and power to elicit responsibility and stewardship.

Intergenerational behaviour research (Wade-Benzoni, 2008) indicates that (1) delay of consequences, (2) comparative uncertainty about the future, and (3) low affinity to future generations are important factors that can prevent present generations from adequately acting on the behalf of future generations. In other words, these studies demonstrate how intergenerational discounting can be reduced by (1) minimizing the perceptions of time delay between current decisions and future consequences, (2) decreasing the uncertainty perception about how current actions impact future generations, and (3) increasing the affinity with future generations.

Despite the fact that time discounting, uncertainty about the future, egocentrism, power asymmetry, and the absence of direct reciprocity appear to create significant barriers to intergenerational beneficence, Wade-Benzoni and Tost (2009) concluded that *intertemporal* and *interpersonal* dimensions of intergenerational decisions can combine to promote "other-oriented" behaviour. In general, there is a positive relationship between *intertemporal* distance and intergenerational discounting, and between *interpersonal* distance and intergenerational discounting. Thus, a greater effect of affinity on intergenerational beneficence was realized when temporal distance was low, and a greater effect of distance on intergenerational beneficence when affinity was low. This conclusion was based on the idea that intergenerational beneficence represents an opportunity for the current generation to create an enduring legacy. A perceived image of the individual could be extended into the future, thereby creating a positive, ethical and lasting impact on others.

One may then ask, "What initiates intergenerational beneficence versus intergenerational discounting?" Both intergenerational reciprocity and intergenerational legacy appear to be integral factors.

2.2.2 The influence of the past: Intergenerational reciprocity

The "norm of reciprocity" is a construct defined and developed by Gouldner (1960). In an effort to more clearly articulate what is implied by reciprocity, he suggests that the norm of reciprocity, "in its universal form, makes two interrelated, but minimal demands: (1) people should help those who have helped them, and (2) people should not injure those who have helped them" (1960:171). The accepted moral code requires that when an individual fulfills his/her status duties to another, the latter has an obligation to repay or fulfill the other's status duties to the individual. This core normative action is then applied across the generational context.

This idea of reciprocal action between generations, *intergenerational reciprocity*, was developed by Wade-Benzoni (2002) and others through a series of studies which showed that the behaviour of previous generations influences how present generations treat future generations. Through the research they determined that people can pass on benefits (or burdens) to future generations as a matter of retrospective obligation (or retaliation) for the good (or bad) received from past generations. Positive (or negative) antecedent behaviour was then seen as a facilitator of (or a barrier to) beneficent behaviour by the recipient toward those who followed (Wade-Benzoni & Tost, 2009). This reciprocal behaviour thus provides us with some measure of how generations interact with each other.

Just as members of one particular group are perceived to treat others from another group differently (Allport, 1954; Brown, 1965; Howard & Rothbart, 1980; Brewer, 1993), the same concept has been proposed to exist within intergenerational groups. Within the generational

context, the clearer the identity of the future generation, the more likely the present generation will seriously consider the impact of their own actions on those in the future (Wade-Benzoni, 2003). When these two constructs of intergenerational identification and intergenerational reciprocity come together, it suggests that while reciprocal obligation cannot be directed back to past generations, appropriate reciprocally-motivated intergenerational behaviour will be directed *forward* in time to *future* generations. Therefore the present decision-maker takes into consideration those in the future, based upon the relationship with prior generations. This construct illustrates the real concept of "paying it forward" (Noble, 2009; Korsgaard, Meglino, Lester & Jeong, 2010). The actions of a prior generation are reflected in the behaviour of the current generation, which will provide a legacy for the future generation.

2.2.3 The influence of the present: Creating a legacy

Many people seek to make a positive contribution to the world they will eventually leave behind (de St. Aubin, McAdmans & Kim, 2004; Grant & Wade-Benzoni, 2009). This desire motivates them to create something that will outlive them and establishes a symbolic form of immortality (Wade-Benzoni et al., 2010). They gain a sense of purpose and derive meaning from their lives when they perceive they have left the world a better place than when they entered it (Grant & Wade-Benzoni, 2009; Wade-Benzoni, 2003). This intention of leaving an intergenerational legacy has significant implications for one's behaviour in the present as it concerns the allocation of benefits and burdens (Wade-Benzoni et al., 2010). People have a greater sensitivity regarding the impact of their legacy when burdens, as opposed to benefits, are involved. The aspect of leaving a burden for the next generation raises a greater awareness of the ethical dilemmas involved and therefore may promote more generous behaviour between the generations. The organizational implication from Wade-Benzoni et al. (2010) is that current and

future generations of managers should have a "psychological link" to each other. This type of connection across the generations may be more likely when (1) managers are encouraged to identify with those who succeed them, (2) individuals involved focus on the ethical implications of intergenerational choices and how their decisions will impact the legacy they leave behind, and (3) organizations highlight the burdensome aspects of intergenerationally relevant decisions and connect decisions about benefits and burdens so managers go beyond short-sighted and self-interested behaviour that so often accompanies the allocation of benefits.

2.2.4 The influence of the future: Connecting through affinity

The issue of leaving a legacy also has implications for how well current and future generations interrelate. A close connection between generations could place a greater emphasis on the current generation's awareness of its own legacy. This connectedness is illustrated by the epiphany moment experienced by a family member of the Benziger Winery (Sharma & Sharma, 2011). Seeing his family's children walking to school through a cloud of herbicide prompted the shift to find biodynamic farming methods. "We owed it to the family and to our future generations and to the land that we lived on to work toward a sustainable ecosystem that would be healthy and productive forever" (2011:319).

To better understand this intergenerational relationship one needs to consider the concept of "psychological distance". In considering events that are not present in the direct experience of reality (Liberman, Trope & Stephan, 2007), the effect is "people pay less attention to subjective experience when that experience belongs to future selves and others, rather than when it belongs to psychologically immediate (present) selves" (Pronin, Olivola & Kennedy, 2008). It also tends to free the decision-maker from immediate subjective concerns. These alternatives to the directly experienced reality define different forms of psychological distance. Psychological distance

consists of several dimensions which apply to intergenerational relationships as they emphasize its "lack of immediacy" (Wade-Benzoni, 2008).

Temporal distance, the delay arising between the decision and its consequences, makes it more difficult for people to act on the behalf of future generations in contrast to comparable intra-temporal trade-offs. It is expected that with *probabilistic distance*, or uncertainty over time, the greater the uncertainty about the consequences to future generations, the lower the intergenerational beneficence. Finally, *social distance* considers that those who will be most affected in the future by today's decision are others, rather than oneself. Insofar as deferred benefits are measured, it is difficult to forgo consumption for one's own deferred use, but significantly more so to do for the benefit of another person in the future. While these dimensions of psychological distance posit a lack of immediacy, Wade-Benzoni (2008) argues that an "affinity" to future generations can narrow the gap. Affinity combines "empathy, perspective-taking, and perceived oneness" whereby the present generation feels empathetic toward future generations and feels they have a better understanding of how their actions will impact future generations.

2.2.5 The emerging issue: Implications for the family-intensive enterprise

The research into intergenerational behaviour has produced some valuable constructs and interesting results, but to date these have not been applied to the context of family business where there is a significant, dynamic and long-term link between family and business (Habbershon & Williams, 1999; Sirmon & Hitt, 2003; Litz, 2008). I expect that using these measures of intergenerational behaviour may provide a richer understanding of how multiple generations of family businesses interact with each other in their attempt to produce sustainable and successful organizations that carry on to future generations. This generational interaction

suggests three important questions about applying intergenerational constructs to the family business context: (1) How does intergenerational beneficence influence the succession decisions in family business? (2) Does intergenerational discounting by the current generation of family business owners decrease the likelihood of success for the next generation of owners? (3) How does affinity for the next generation, produced through working directly with them in the family business, influence intergenerational behaviour? These questions of intergenerational behaviour within the family enterprise context may also have a direct influence on operational decisions pertaining to environmental sustainability. I consider those implications next.

2.3 Environmental sustainability

Environmental sustainability is a common buzzword often invoked when referring to the impact organizations have on the natural environment (Eilers, MacKay, Graham & Lefebvre 2010; Canada, 2010 http://tinyurl.com/l8g5utn; Sustainability Report http://www.sustreport.org/; People and Planet http://www.planetfriendly.net/). In the context of my research, I am interested in determining whether the *intention and action* to pass the business over to family has an impact on how issues of environmental sustainability are perceived and addressed. First, I consider how the broad concept of environmental sustainability has been defined and researched; and second, how it has been applied to small and medium family businesses, with specific application in the agricultural community.

2.3.1 Background: Environmental sustainability defined

The World Commission on Environment and Development (Brundtland Commission) published its report in 1987. This report presented a new concept—sustainable development. Bärlund (2005) suggests this definition helped to shape the international agenda and the international community's attitude towards economic, social and environmental development.

The Brundtland Commission's report defined sustainable development as "development which meets the needs of current generations without compromising the ability of future generations to meet their own needs" (Brundtland, 1987). It is a definition that has continued to be used despite its degree of ambiguity and it has helped to elevate the degree of meaningful action whereby the idea of sustainable development is broadly supported and vigorously pursued.

This definition is helpful in establishing a broad framework around issues of sustainability, but I would like to narrow the focus to aspects that address the natural environment. As Goodland (1995) points out, environmental sustainability is an integrated concept that is linked to, but different from, social sustainability and economic sustainability. Whereas *social* sustainability encompasses a moral capital that "requires maintenance and replenishment by shared values and equal rights, and by community, religious and cultural interactions" (1995:3), *economic* sustainability "focuses on that portion of the natural resource base that provides physical inputs, both renewable (e.g., forests) and exhaustible (e.g., minerals), into the production process" (1995:2). In contrast, *environmental* sustainability is most simply defined as the "maintenance of natural capital" (1995:10). As such, it is a set of constraints on two major groups of activities that regulate the scale of the human economic subsystem; first, the use of renewable and non-renewable resource inputs on the production side; and second, the generation of pollution and assimilation of waste on the output side.

The concept of environmental sustainability is based on the assumption that natural resources can be developed, owned and consumed on a more responsible basis (Vogel, 2005; Hawken, Lovins & Lovins, 2010). Embracing a more holistic or life-cycle perspective of global resources places a significant emphasis on the effectiveness of sustainability initiatives whereby one can objectively assess progress towards environmental sustainability. There are still many

unanswered issues to the environmental challenges, such as demonstrating that environmental research, policies and regulations cause measurable changes in environmental quality (Jordan et al., 2010), but initiatives have begun to build a more environmentally sustainable culture (Lerner, 1998).

Goodland (1995) also challenges colleagues addressing environmental sustainability to seek rough, rather than precise, indicators of sustainability so the field can move forward, as being roughly right is better than being precisely wrong. He stresses the concept of *sufficiency*, that is, doing more or enough with less, which needs widespread dissemination if the implications of attaining environmental sustainability are to be fully embraced. Typologies of environmental strategies have also emerged along a continuum that ranges from reactive to proactive (Russo & Fouts, 1997; Sharma, 2000). Whereas *reactive* strategies focus on pollution control and regulatory compliance, *proactive* strategies focus on pollution prevention and voluntarily going beyond compliance.

2.3.2 Environmental sustainability: Encouraging responsible behaviour

Encouraging organizations to adopt environmentally sustainable business practices goes beyond simply measuring certain environmental practices or adopting a particular accounting procedure. As Jordan et al. (2010:1535) states, "actions, including legislation, regulation, mitigation, resource management, enforcement, education, and social responses to environmental challenges are the dynamic forces that produce results." Environmental sustainability requires interdisciplinary collaboration because environmental problems are not just psychological problems, but rather ecological, technological and socio-cultural problems (Steg & Vlek, 2009). To have behaviour change, interventions are generally more effective when they are systematically planned, implemented and evaluated. Understanding which factors promote or

inhibit environmental behaviour, such as (1) perceived cost and benefits, (2) moral and normative concerns, and (3) effect, is critical.

However, as many of these practices are voluntary and/or market-driven, companies will engage in this action only to the extent that it makes sense, business or otherwise, for them to do so. In many cases, it only makes business-sense if the costs of more virtuous behaviour remain modest (Vogel, 2005). The most important driver of this responsible behaviour is the argument that good corporate citizenship is also good business. There appears to be a role for both voluntary and legally binding standards. Achieving environmental sustainability needs to be more than going "beyond compliance" and also requires efforts that help raise compliance standards.

2.3.3 Environmental sustainability in the small and medium size enterprise

While big business and governing regulators are expected to generate a significant initiative because of their perceived contribution to the problem, small and medium enterprises (Carland, Hoy, Boutlton & Carland, 1984) (hereafter designated as SMEs) are also addressing these issues (Tilley, 2000; Dyllick & Hockerts, 2002; Revell & Blackburn, 2007). More specifically, Masurel's (2007) research examined the rationale for entrepreneurs in SMEs to invest in environmental issues. He found that the reasons for investing include (in descending order of importance) (1) a desire to improve working conditions, (2) the need to satisfy legislation, (3) a desire to fulfil one's moral duty, (4) a desire for order and cleanliness, (5) a desire to respond to the needs and expectations of both the employees and clients, (6) a desire to improve the image of the firm, (7) a desire to clarify the values, vision and strategic direction of the firm, and (8) the potential realization of cost savings. Employee and/or employment-related reasons rank as a top priority for taking care of the environment. Accordingly, environmental

sustainability should be appreciably more germane for businesses where family members are principally involved in the workforce.

This idea is further reinforced by Jenkins (2006) who argues that SMEs, not just large corporate firms, are effective at addressing their social and environmental impacts. The research showed that SMEs prefer to learn through networking and from their peers, whereby the SME's behaviour reflects the owner-manager. In working with owners-mangers, it therefore may be quite effective for addressing social responsibility issues. This responsible behaviour is led by a champion through (1) developing an understanding of environmental responsibility and translating this into business principles, (2) identifying appropriate responsibility activities, (3) overcoming challenges, and (4) identifying business benefits. These findings point to the need for greater clarity on how SMEs integrate environmental sustainability activities into overall firm management.

One such study examined Dutch firms (Uhlaner, vanGoor-Balk & Masurel, 2004). This research considered social sustainability as the level of contribution a company made towards the betterment of society. The outcome was philanthropic activity, primarily limited to small acts of kindness toward the closest stakeholder groups (employees, clients and suppliers), but focused on what was closest to home and family: the sports club, church group or other local organizations. Using the vernacular of Sharma and Sharma (2011), it is the "dominant coalition" that helps shape the perceptions of the prevailing social norms and control over firm activities. I suggest this type of strategic behaviour is significantly driven by the involvement of family, for in the family enterprise it is primarily family members who make up the dominant coalition.

Insofar as family stakeholders are concerned, an understanding of how focusing on the natural environment can have a positive influence on firm innovation and firm performance is

critical. Déniz and Suárez (2005) explored this relationship, specifically the connection between a social responsibility orientation, values of the family, its vision of human nature, and the degree to which specific environmental sustainability actions are embraced. They found it would be useful to orientate future research to the analysis of family characteristics, particularly values and culture, to determine the factors of different environmental sustainability orientations and behaviours. With this knowledge, family firms could strengthen their capability and increase their leadership role as stewards of the natural environment (Craig & Dibrell, 2006).

2.3.4 Environmental sustainability in the family farm context

The principles around environmental sustainability and how they apply to family businesses have also been extended into the agricultural context (Rosset, 2000; Brookfield, 2008). Family farms use a broad array of natural resources where its sustainability is important. They employ diverse farming systems that preserve significant functional biodiversity within the farm. Moreover, family member commitment to maintaining soil fertility means a major commitment to long-term sustainability. Further research that analyzed indicator-based approaches to assessing environmental impact at the farm level concluded that to effectively evaluate environmental impacts, evaluation methods should take into account a range of objectives covering both local and global effects (van der Werf & Jean Petit, 2002).

An example of one of these indicator-based approaches comes from the Canadian context where two main criteria have been used to judge the environmental sustainability of Canada's farms (McRae, Smith & Gregorich, 2000). An agricultural operation's sustainability is assessed as to (1) how well it manages and conserves *natural* resources that support agricultural production, and (2) how *compatible* agricultural systems are with natural systems and processes. Six specific agri-environmental indicators include (1) environmental farm management, (2) soil

quality, (3) water quality, (4) greenhouse gas emissions, (5) agro-ecosystem biodiversity, and (6) production intensity. This type of study provides a snapshot picture and identifies both key strengths and limitations in assessing the impact on the natural environment. Further research at each regional level is required to understand the agriculture-environment interactions and processes with a concerted effort coming from policymakers, producers, researchers, analysts, educators and consumers to achieve a more environmentally sustainable industry.

2.3.5. Organizational Citizenship Behaviour

Environmental sustainability is also a behaviour that may be considered as discretionary, having ethical implications, and not directly or explicitly recognized by the formal reward system. These types of behaviours have been formally identified and studied as organizational citizenship behaviour (OCB) (Bateman & Organ, 1983; Smith, Organ, & Near, 1983). Much of the research and corresponding literature has focused on both the nature of the behavioral dimensions studied and even more so the terminology used by researchers to label the dimensions (LePine, Erez & Johnson, 2002). While the core definition of OCB remains as the behavior that contributes "to the maintenance and enhancement of the social and psychological context that supports task performance" (Organ, 1997, p. 91), much more focus has been given to various dimensions that have been proposed as predictors of OCB, supporting the argument that OCB may function more as a latent variable (LePine, Erez & Johnson, 2002). Some of the contexts in which these dimensions have been used include transformational leaders (Podsakoff, MacKenzie, Moorman and Fetter, 1990; Wang, Law, Hackett, Wang and Chen, 2005), insurance company sales agents (Podsakoff and MacKenzie, 1994), restaurants (Koys, 2001), travel agency customer assessment of quality (Yoon and Suh, 2003), purchasing managers (Baker, Hunt and Andrews, 2006), and the financial service sector (Lin, Hung and Chiu, 2007).

The five most prominent measurable dimensions of OCB that have been identified (Podsakoff, MacKenzie, Moorman and Fetter, 1990) include (1) altruism, (2) conscientiousness, (3) sportsmanship, (4) courtesy and (5) civic virtue. Accordingly, altruism is defined as discretionary behaviors that have the effect of helping a specific other person with an organizationally relevant task or problem. Conscientiousness refers to the discretionary behaviors on the part of the employee that go well beyond the minimum role requirements of the organization, in the areas of attendance, obeying rules and regulations, taking breaks, and so forth. Sportsmanship, in contrast, is stated as the willingness of the employee to tolerate less than ideal circumstances without complaining to "avoid complaining, petty grievances, railing against real or imagined slights, and making federal cases out of small potatoes" (Organ, 1988, p. 11). Courtesy is the discretionary behavior on the part of an individual aimed at preventing work-related problems with others from occurring. Finally civic virtue is the behavior on the part of an individual that indicates that he/she responsibly participates in, is involved in, or is concerned about the life of the company.

These specific dimensions may be adaptable to issues relating to environmental sustainability and thereby capture the degree to which owners or managers are committed to implement their appropriate environmental citizenship behaviour (ECB) over areas under their responsibility. As such, these ECB dimensions could serve as proxies for both the intention and the more specific actions, while helping to guard against a self-serving bias.

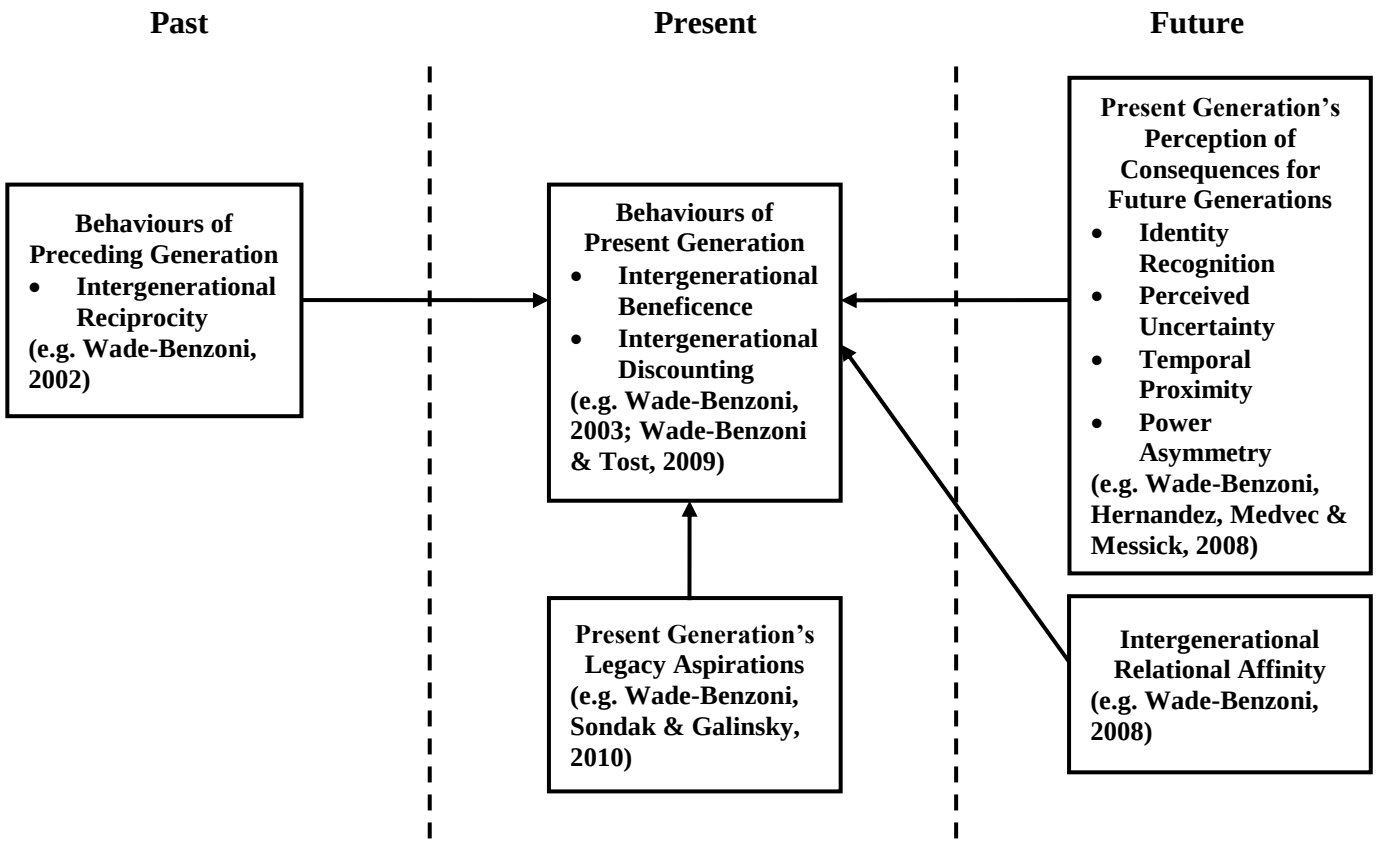
2.3.6. The emerging issue: Achieving environmental sustainability that goes beyond mere compliance

In the growing movement to maintain natural capital and the attempt to measure levels of environmental sustainability, research has shown how various efforts to encourage the desired behaviour have occurred in the family business context. A holistic approach is necessary to fully assess the environmental impact and make a significant change to values across the marketplace. In considering the role of succession in the family enterprise, the constructs of intergenerational behaviour and how the dominant coalition can direct the choice of organizational values, one asks, "How might an intergenerational succession strategy be associated with present business decisions affecting environmental sustainability that go beyond minimal legal compliance?"

2.4 Conclusion

This chapter began by looking at the work done on family business succession strategy, which then led me to consider how these factors might fit with the constructs of intergenerational behaviour. As I was also interested in how decisions that pertain to environmental sustainability might be affected, I explored the literature on how intergenerational factors might influence specific environmental sustainability behaviours and may also be captured by organizational citizenship behaviours. Chapter Three will advance several hypotheses that attempt to provide answers to the identified research questions.

Figure 2.1 – Summary of selected intergenerational research constructs



3. Hypotheses

3.1. Introduction

In this study I investigate the nature of succession strategy, its relationship to intergenerational behaviours, and its relationship with the issue of managing environmental sustainability. In the previous chapter, I examined the theoretical context provided through research on family firm succession, intergenerational behaviour, and environmental sustainability. I identified a number of emerging gaps in the extant research and proposed to address three specific research questions. I now present my hypotheses complete with supporting arguments.

Central to my dissertation is the question, "*How does one's strategy to pass an enterprise over to the next generation of family at some point in the future influence how one manages that enterprise in the present?*" I will attempt to answer this question with the following hypotheses. My overarching model is illustrated in Figure 3.1.

3.2. Familial succession strategy: Action with intent

Given that family succession plans are intentional and not simply a random occurrence (Sharma, Chrisman & Chua, 2003b), "*How then do family-related intentions shape firm-related behaviour?*" Finding an answer begins with understanding the relevance of its family-intensive nature, provided *family* affords the distinguishing quality. The unique family enterprise combines the interpersonal and relational dynamics found within the family unit and the vision, intentions, and business activities required to operate an enterprise (Habbershon & Williams, 1999; Chrisman, Chua & Sharma, 2005). It is a unique combination of resources referred to as the "familiness" of the firm (Habbershon & Williams, 1999). As stated in section 2.1, I define family business as one that is owned and managed by the same family, where at least one family

member operates the business and another from the next generation is being considered for the future leadership of the business (Brun de Pontet, Wrosch & Gagne, 2007).

Going beyond a specific definition of family business, Hall (2003) describes its process and institutional roles, concluding that the family is important for two interrelated yet not fully compatible functions: (1) the belonging of the individual (including a healthy individuation) based on reciprocity and trust, and (2) the sense of separateness from the family (also required by a healthy individuation). Yet this juxtaposition of roles manifests in stable ways of thinking and consistent behaviours of interaction. Moreover, Dallos and Sapsford (1997) argue that family life should be defined as a *process*, or as Reiss (1987:170) describes it, a kind of relationship in which "each member accords to the others the power of independent regard".

Amid this variation of family and competition between individual and family identity, there appears to be a special sense of connectedness that is manifest in a recurring willingness to do things for *family* that one would *not* do for non-family. One particular connection is a willingness to do things that would require a much longer time frame to pay back, in comparison to conventional business logic (Love & Irani, 2001; Hynek & Janeček, 2008).

Family business succession research indicates this family nature is typically displayed through its ownership philosophy, business philosophy and social philosophy (Miller & Le Breton-Miller, 2005). As a result, (1) shareholders are more committed and involved, (2) top managers strategize with long-term results and a future orientation in mind, and (3) employees share the family's organizational values and intrinsic incentives. These decisions involve behaviours that are guided by criteria that are comparatively longer term in nature. A "long-term" orientation in family business means leaders have more freedom and motivation to "act for the long run good of the organization" and its stakeholders (Miller & Le Breton-Miller,

2003:129). Moreover, it translates into time horizons that go beyond any one particular leader or generation (Le Breton-Miller & Miller, 2006). Such a focus encourages an orientation that spans multiple leaders, or as in this dissertation context, multiple generations. There are, however, two qualifying conditions for a succession strategy to be realized, intention and action.

Employing a succession strategy in family business means taking the necessary steps in a process that hopefully results in "the transfer of leadership from one family member to another" (Sharma, Chrisman & Chua, 2003a:669). A strategy that is simply measured on the degree of intent is incomplete (Drucker, 1974, 2008). The necessary process also includes actions, (1) selecting and training a successor, (2) developing a vision or strategic plan for the company after succession, (3) defining the role of the departing incumbent, and (4) communicating the decision to key stakeholders (Sharma, Chrisman & Chua, 2003b). These actions need to be evident in order for the intention to be realized.

Researchers agree that, while activities related to intent and action have some overlap, successful succession is more likely when intent and action work in tandem (Ward, 1987; Morris, Williams, Allen, & Avila, 1997; Dyck, Mauws, Starke & Mischke, 2002; Sharma, Chrisman & Chua, 2003b).

3.3 Primary hypothesis: Family-related succession strategy and environmentally sustainable management practices

Supposing that family business succession strategy is associated with longer-run time horizons, I am interested in understanding how this succession intention is manifest in behaviour that is related to environmental sustainability. More specifically, "*To what extent might intergenerational succession strategy influence present business decisions to engage in environmentally sustainable management practices that go beyond minimal legal compliance?*" I

begin by examining the nature of environmental sustainability and then consider why it is important for the family enterprise, and more specifically the family farm.

Researchers understand from the environmental sustainability literature that engaging in environmentally sustainable farming practices, or the "maintenance of natural capital", (Goodland, 1995) requires that one considers the use of renewable and non-renewable resource inputs on the production side, and the generation of pollution and the assimilation of waste on the output side. Addressing both inputs and outputs is critical for establishing a comprehensive assessment. In other words, adopting a holistic or life-cycle perspective is to focus on both reactive and proactive business strategies (Vogel, 2005; Hawken, Lovins & Lovins, 2010). Dealing with pollution *control* and regulatory *compliance* are measures of a *reactive* strategy, whereas addressing pollution *prevention* and voluntary participation *beyond* compliance are examples of a *proactive* strategy (Russo & Fouts, 1997; Sharma, 2000; Sharma & Sharma, 2011). Both strategies may be relevant and should be evaluated to assess the organization's holistic environmental impact.

Research regarding the importance of environmental sustainability among SMEs indicated a very low level of "eco-literacy" and a lack of expertise in environmental management (Revell & Blackburn, 2007), whereby environmental practices were primarily perceived as a drain on profits. These findings came from the UK construction and restaurant sectors and were the basis of suggesting broader regulatory steps to level the playing field among all business owners. While these results do not provide much support for SMEs embracing sustainability, specific research on family firms and environmental performance reported better environmental performance, as measured on a Human Toxicity Potential Emission Factor (HTPEF) (Berrone, Cruz, Gomez-Mejia & Larraza-Kintana, 2010), than their non-family counterparts. The rationale

they discovered for these results indicated that family-controlled firms sought to manage their socio-emotional wealth, that is, the "non-financial aspects of the firm that meet the family's affective needs, such as identity, the ability to exercise family influence, and the perpetuation of the family dynasty" (Gomez-Jejia, Haynes, Nunez-Nickel, Jacobson & Moyano-Fuentes, 2007:106). This reasoning has further support from Zellweger, Nason, Nordqvist and Brush (2011) who propose it is the "visibility of the family in the firm, the trans-generational sustainability intentions of the family, and the capability of the firm for self-enhancement of the family" (2011:1) that positively influence these choices for non-financial goals.

One particular example of a 'non-financial' priority in the family farm context is environmentally sustainable farming practices. The assumption is that family members make up the "dominant coalition" (Sharma & Sharma, 2011) in the family farm and therefore help shape the perceptions of the prevailing social norms through how they control the farm activities. Disregarding environmentally sustainable farming practices could produce future burdens, and as a result, reflect negatively on the family legacy. The aspect of leaving a burden for the next generation raises greater awareness of the ethical dilemmas (Wade-Benzoni et al., 2010) and may therefore promote more generous and beneficent behaviour.

This is not to say that economic factors are completely ignored. There are still several factors in tension. Generally, regulatory compliance increases short-term operational costs, but farming practices that are good for the environment are expected to lead to more sustainable and long-term growing resources. Moreover, business owners typically give preference to those practices that generate a financial return, but in multi-generational family businesses there is also a longer-run perspective where relational family values play a significant role in operational

business decisions. I suggest it is the family-influenced, non-economic values of environmentally sustainable agriculture practices that will persist in the long run.

Therefore I propose that a family succession strategy, with its corresponding long-term perspective, will be associated with environmentally sustainable farming practices that include and go beyond minimal compliance.

Hypothesis 1a: There is a positive relationship between the family related succession strategy to pass on the family business to the next generation and the intention to engage in environmentally sustainable farming practices.

However, I am most interested in the relationship between the succession strategy and environmentally sustainable farming practices. Building on the logic of the link between attitudes and behavioural intentions (Ajzen, 1991) and the role of intentions between attitudes and behaviour (Rosen & Komorita, 1971), I am combining the intentions and actions of environmentally sustainable farming practices.

Hypothesis 1b: There is a positive relationship between intentions to engage in environmentally sustainable farming practices and the actual enactment of those practices.

3.4 Moderating hypotheses: Industry context

In general terms, moderators are qualitative (e.g., gender, education, farm type) or quantitative (e.g., age, generation) variables that affect the direction and/or strength of the relationship between an independent and a dependent variable (Baron & Kenny, 1986). Within the correlational analysis framework, this third variable affects the zero-order correlation between the independent and dependent variables. The most relevant indicators from the industry

context in question that may provide a moderating influence include resource munificence and family farm product mix.

3.4.1 Intra-organizational resource munificence

In this research, resource munificence refers to a measure of the scarcity or abundance of critical resources available to family farms operating within the agricultural sector. The concept of munificence originates from the research by Aldrich (1979), and Dess and Beard (1984) focused on capacity and the extent to which the organization can support sustained growth and development. This scarcity or abundance of critical resources needed by firms in the specific industry influences the continued survival and growth of firms sharing that environment (Jogaratnam, Tse & Olsen, 1999).

The degree of munificence is also positively linked with a range of strategy and organization options available to firms. In resource-abundant firms there is a reduced focus on simply surviving and more energy is available for strategic options (Brittain & Freeman, 1980). In resource-poor firms the predominant focus on efficiency of scarce resources results in the tightening of budgets, increased emphasis of cost cutting, and intensification of efforts to ensure accountability (Koberg, 1987). Furthermore, firms with low levels of munificence pay more attention to their resource conservation and are more likely to commit illegal acts (Goll & Rasheed, 2004). On the other hand, firms with high levels of munificence are more likely to be involved in socially responsible behaviour, which further reinforce the behaviour legitimacy. Thus, this established role of munificence leads us to the following hypothesis.

Hypothesis 2a: The relationship between the succession strategy to pass on the family business to the next generation and environmentally sustainable farming practices is moderated by the firm's resource munificence (i.e., the greater the degree of munificence, the greater the degree of environmentally sustainable farming practices).

3.4.2 Extra-organizational regulatory requirements

Family farms are not succinctly grouped into one unitary classification. Each classification of farm type (i.e. North American Industry Classification System) is based on a primary production-oriented framework. Accordingly, the type of farming operation determines the degree to which certain regulations will be applied.

Interviews with farm organizations revealed that different sectors of the agricultural industry are subject to varying degrees of regulatory pressure and environmental monitoring, depending upon the type of farming operation. Therefore, I suggest that producers who are subject to greater regulatory demands for environmental farming practices will experience less room for discretion, whether through regulatory structures or public pressure, and will be more likely to adopt these practices, either to avoid possible penalties or satisfy consumer demand.

Hypothesis 2b: The relationship between the succession strategy to pass on the family business to the next generation and environmentally sustainable farming practices is moderated by the type of farming operation (i.e., the higher the number of environmental regulations the farm type is subject to, the greater the degree of environmentally sustainable farming practices).

3.5 Moderating hypotheses: Intra-familial social dynamics

3.5.1 Intergenerational behaviour in the family enterprise context

Accepting that long-term time horizons apply to the family enterprise, the behaviour of multiple generations becomes a relevant set of constructs to take into account. The present generation may be faced with intergenerational conflicts where the present generation faces a decision to incur costs which will only benefit subsequent generations (Wade-Benzoni, 2002). This understanding prompts the question, "*What impact does intergenerational beneficent behaviour have on the succession strategy?*" The research on intergenerational behaviour provides us with some critical constructs that will help explain the proposed moderating effect of beneficence on the succession strategy—environmental sustainability relationship. In other words, I propose that the decision of what the current generation contemplates passing on to their children will moderate the extent to which the independent and dependent variables are positively related.

Researchers of intergenerational behaviour have clearly defined intergenerational beneficence and discounting. Beneficent behaviour is the deferring of benefits so they can grow in the future, or addressing burdens in the present to prevent them from escalating in the future (Wade-Benzoni, 2008). In contrast, discounting behaviour is the preference for smaller benefits for *oneself* in the *present*, to relatively larger benefits for *others* in the *future* (Wade-Benzoni & Tost, 2009). In terms of measuring these behaviours, the degree of beneficence (i.e., x) is assumed to be the converse of the level of discounting (i.e., $1-x$), essentially a zero sum proposition (Moulin & Vial, 1978) where "more for me now means less for you later". The example below illustrates this relationship.

Consider the decision of a farmer deciding how to handle a limited quantity of harvested seed. Selling the seed to a mill for processing generates some immediate revenue, which can then be used for satisfying immediate needs. Keeping the seed for planting in the next growing season provides hope and sustainability of future harvests. Choosing to sell the seed would result in greater immediate benefits of revenue, but less long-term benefits of longevity—a choice with more discounting and less benefit for those in the future. In contrast, selecting to use the seed for planting would mean more long-term benefits of sustainability for those in the future, but less immediate financial benefits—a choice with less discounting and more benefits for those in the future. The implication is that family business owners, who have a strategy for family succession and are planning for the next generation, are comparable to the farmer willing to plant the seed. Those who are less intentional are more similar to the farmer satisfied with selling the seed. There are, however, several qualifying conditions concerning the moderating effect of intergenerational behaviour that potentially impacts the primary hypothesized relationship.

3.5.2 Intra-familial relational affinity and generational proximity

Affinity combines "empathy, perspective-taking, and perceived oneness" (Wade-Benzoni, 2008) whereby the present generation feels empathetic toward future generations and feels they have a better understanding of how their actions will impact future generations. The relationship between individuals (or generations) results in a sense of caring (Schmid, 2000). The proposed intention-behaviour relationship assumes a strong *affinity* between generational family members and close physical *proximity* between the current and next generation of family. Affinity therefore tempers the current generations' self-interest by the degree of familiarity or connectedness they have with those family members who will follow in their ownership responsibilities. Likewise, a close proximal working relationship potentially fosters beneficent

behaviour from the familiar and confident relationship between the generations (Wade-Benzoni, 2006; Monge et al., 1985).

One need also to consider the role of *intertemporal distance* (i.e., actions in the present affect outcomes in the future) and *interpersonal distance* (i.e., actions of one person or group affect outcomes for another person or group) in the family business context. Research has shown a positive relationship between both intertemporal and interpersonal distance, and intergenerational discounting (Wade-Benzoni & Tost, 2009). That is, as intertemporal distance increases, intergenerational discounting increases. Similarly, as interpersonal distance increases, intergenerational discounting increases. Moreover, results indicate that as the distance increases between time frames and persons, the degree of intergenerational discounting increases and the level of intergenerational beneficence decreases. This relationship between factors also indicates that a greater effect of affinity on intergenerational beneficence is realized when temporal distance is low, and there is a greater effect of distance on intergenerational beneficence when affinity is low. The implication is that as intertemporal and interpersonal distance between decisions and consequences increases, beneficence toward future generations decreases (Wade-Benzoni et al., 2008).

3.5.3 Succession strategy and intergenerational behaviours

Building on this logic, the current generation who engages in a strategy to pass the business on to the next generation is more likely to be characterized by a higher degree of intergenerational beneficence and conversely a lower degree of intergenerational discounting, thereby giving greater consideration to how current decisions will positively or negatively impact the next generation of family members operating the business. Given the earlier research, I also propose these relationships to be moderated by affinity.

Hypothesis 3: The relationship between the succession strategy to pass on the family business to the next generation and environmentally sustainable farming practices is moderated by the affinity between the generations (i.e., the greater the degree of affinity, the greater the degree of environmentally sustainable practices).

3.6 Conclusion

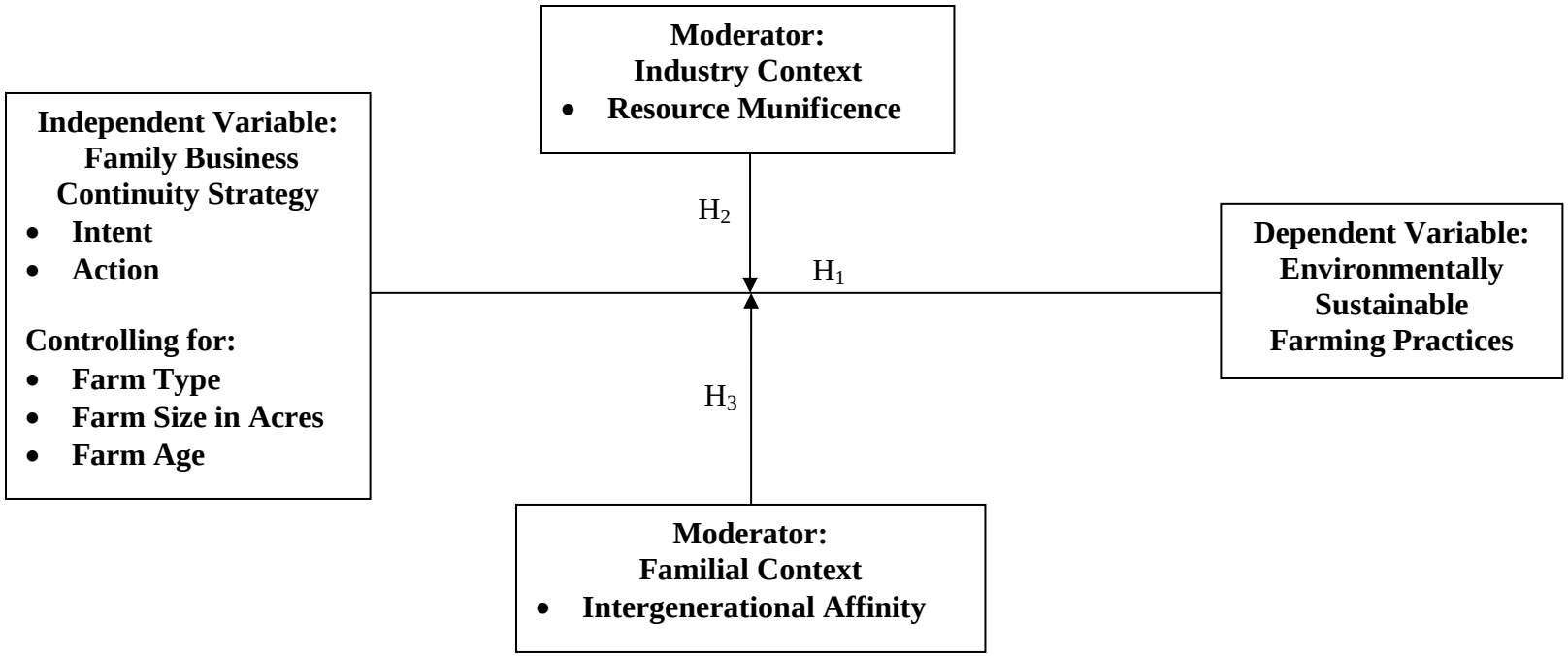
This dissertation seeks to present a theoretical and practical understanding of the relationship between the strategy to pass on the business to the *future* generation of family and the *present* management of the business. Family succession continues to be a central issue for the family enterprise. Three relevant research questions were identified in Chapter 1:

1. Do owners of family enterprises manage differently when they intend to hand the enterprise on to their family?
2. How do the intergenerational constructs of intergenerational beneficence and intergenerational discounting function within the family business context when the intention is to hand the business over to future generations?
3. How does intergenerational intentionality influence present business decisions to engage in environmentally sustainable management practices that go beyond minimal legal compliance?

These questions have been addressed by the theoretical framework and hypotheses developed in this chapter. In response to the first question, the overarching model proposes that the strategy to pass the business on to family is significant in regards to how the business is managed. The second question was addressed by considering intergenerational beneficent behaviour from within the family business context and taking into account the influence of intergenerational reciprocity and legacy aspirations. Finally, environmentally sustainable family farming practices were considered to have a positive relationship with succession strategy. The

proposed hypotheses argued that the strategy to pass on the business to the next generation of family is positively associated with (1) longer business time horizons, and (2) environmentally sustainable farming practices. To empirically test these hypotheses, Chapter Four provides the methodology used for collecting data.

Figure 3.1 – Model of hypotheses to be tested



4. Research Methodology

4.1. Introduction

Family business owners face hundreds of decisions each day concerning their business operations. Many of these are similar to typical management decisions related to the day-to-day details of running a profitable business. However, the fact that the business is owned and managed by a family and potentially spans multiple generations creates some unique challenges.

This dissertation seeks to explore these "unique challenges," specifically whether and how the intention to pass the business over to family provides a distinctive motivation for the way the enterprise is managed, both now and for the future. Accordingly, Chapter 1 outlined the nature of the problem in brief. This was followed by Chapter 2, which provided a survey of three relevant research streams: (1) intra-familial succession with its related predisposition toward longer, rather than shorter, time horizons, (2) intergenerational behaviour and its potential application to the multi-generational family business context, and (3) environmental sustainability and how intention for intra-familial succession potentially encourages behaviour that goes beyond minimal compliance. Based on the application of these streams of literature, Chapter 3 outlined my theoretical framework culminating in three hypotheses centering on intra-familial succession strategy. This chapter outlines the methodology that was used to test these hypotheses.

The discussion of my methodology follows in the next five sections. First, I explain my rationale for selecting the agricultural farm industry for my study's context. Second, insights gained from five exploratory industry association interviews are reported. These are used in the third section, which details the overall study design and the process of instrument development. The fourth section centres on the completion of a pre-test used to critique the validity of both

basic instrument design and specific survey measures. The final section presents operationalizations of all relevant variables and explains the underlying rationale.

4.2. Industry selection: Manitoba family farms

In Chapter Two, I reviewed the family business literature and its contribution to the area of succession research. I identified the gap in extant research that examines how the strategy to have future generations of family assume ownership and managerial control potentially impacts the present business management practices, particularly as they concern issues of environmental sustainability. An industry that has a significant intra-organizational family involvement and has come under close scrutiny in regards to treatment of the natural environment is the farm industry (Manitoba Agriculture, Food and Rural Initiatives [MAFRI], 2010; Eilers, MacKay, Graham & Lefebvre, 2010; Manitoba Agriculture Statistics [MAS], 2006). I therefore studied Manitoba's family farm community to test the hypothesized relationships between the intention to pass on the family business to the next generation, intergenerational behaviour, and environmentally sustainable management practices.

The farming industry is well-suited for this study for several reasons. First, family farm operations make up a significant portion of the agricultural producers in Manitoba with individual/family farms accounting for 57% of the number of farms in the province (MAS, 2006). Second, this industry has experienced significant legislative and public pressure to address aspects of environmental impact (Eilers, et. al, 2010). Third, the convergence of family enterprise, intergenerational operations and environmental concerns provides an appropriate context in which to test what role, if any, intra-familial business succession strategies have for intergenerational behaviours and environmentally sustainable farming practices.

An important criterion for this particular research is that the industry should contain a significant number of family firms. In addition, because of the study's focus on the different generational perspectives and dealing with environmental sustainability, the selected industry needs to include a variety of firm ages and generational stakeholders and also clearly articulate the environmental challenges the industry participants face. An industry satisfying all of these criteria, and that is therefore used for this study, is the farming industry (which includes North American Industry Classification System [NAICS] 1111- Oil Seed and Grain Farming, 1112-Vegetable and Melon Farming, 1113-Fruit and Tree Nut Farming,1114-Greenhouse, Nursery and Floriculture Production, 1119-Other Crop Farming, 1121-Cattle Ranching and Farming, 1122-Hog and Pig Farming, 1123-Poultry and Egg Production, 1124-Sheep and Goat Farming, 1125-Aquaculture, 1129-Other Animal Production). Table 4.1 provides the 2011 Farm Census data showing the percentage breakdown of farm types.

4.3. Research study level of analysis

Errors of misspecification can occur when data collected at one level of analysis are generalized to higher levels (Chrisman, Sharma & Taggar, 2007). Most studies in family business research focus on a single-level of analysis such as firms, groups, or individuals. In the current study I proposed to collect data at the individual level because I expected that the majority of farms participating were small or medium sized enterprises and therefore the individual owner/manger's perception would be a reasonable indication of the group or firm's performance.

Drawing from the work by Chan (1998) and the development of a typology of composition models, this study may best be described through the categorization of the "referent-shift consensus model." In this model, a dimension attributed to the organizational (farm) level is

derived by shifting the referent in the individual perception from the self to the team as a whole. In other words, the individual farmer serves as a proxy for the farm as a whole. As such, it is an altered version that is used and not simply the individual-level construct to determine the group-level construct. Group members, or in this case, farm owners, are not only asked to assess individual psychological climate, they are also asked to assess the climate of their group or in this case their family and its farm. The altered version of the individual-level construct is then aggregated to the group level after establishing sufficient agreement among group members (van Mierlo, Vermunt & Rutte, 2009).

4.4. Exploratory research on family farm industry

To gain a more comprehensive understanding of issues facing the family farms, I carried out five interviews in mid-2010 with a variety of industry insiders to explore critical issues surrounding the agriculture industry. The representatives interviewed were from five different organizations including (1) *Manitoba Pork Council* – Andrew Dickson, General Manager, (2) *Manitoba Rural Adaptation Council Inc.* – Ted Eastley, Executive Director, (3) *Manitoba Agriculture Food and Rural Initiatives* – Grant Palmer, Policy Economist, (4) *Keystone Agricultural Producers* – Yvonne Rideout, General Manager and James Battershill, Policy Analyst, and (5) *Signature Mediation* – Gerry Friesen, Private Mediation Consultant. The protocol of interview questions is in Appendix 1.

4.4.1. Semi-structured interviews: Inductive results

Several important insights emerged from the interviews, which have been categorized into three basic themes: (i) family and resource challenges, (ii) operational implications, and (iii) principal motivation for family farm producers. The overall observations are presented in an

integrative model in Figure 4.1. Table 4.2 provides a summary of the organizations, their mandate and significant comments gleaned from the semi-structured interviews.

i. Family and resource challenges

A dominant factor that emerged from several of the interviews was the fact that many family farms are struggling to attract the next generation of farmers. In short, the degree and diversity of pressures that the next generation has observed the current generation enduring is essentially driving the next generation off the farm (Dickson, 2010; Wilson, 2010; Winzoski, 2010; Friesen, 2010; Froese, 2010; Friesen, 2002).

Exacerbating this trend is a dearth of specific leadership/mentorship in the area of rural community development (Eastley, 2010). For the family farm to thrive, rural communities need to be vibrant with a solid social structure and necessary infrastructure (i.e., schools, business services, Internet and community services.) The limited amount of succession-related assistance available is only aggravated by a frequent unwillingness among farmers to openly discuss the stress they face and the challenges faced in becoming more proactive in family farm succession planning (CASA, 2005a). These internalized pressures have manifest in an alarming increase in the development of rural stress management call-in lines (Friesen, 2010) and even incidents of suicide among farm families (Dickson, 2010; Sturgeon & Morrissette, 2010; Gregoire, 2002).

While the amount of arable land that is employed in agriculture has not changed significantly (MAS, 2006; MAFRI, 2010), the number of farm operations has continued to decrease even while the size of farm has continued to increase. Table 4.3 provides a summary of these and other key trends in Manitoba agriculture.

The net effect for family farms is an increase in debt levels, and also asset values and net worth, which together heighten market entry barriers for the next generation interested in taking

over the family farm. The decline in the number of farm operations is also due to an increase in the number of professionally-managed corporate farm operations, many of which have their roots in a family farm operation.

In terms of the larger industry context, the professionally-managed corporations have, for the most part, moved into specialized areas of agriculture, while the traditional "mixed" family farm model is increasingly marginalized (Dickson, 2010). The traditional family farm also struggles to effectively compete against specialized farms described by *pluriactivity*, that is, a diversification strategy that includes both on-farm and off-farm income-generating activities (Brookfield, 2008). Actions by industry suppliers reward volume-oriented competition (i.e., in terms of using crop and livestock genetics, fertilizer, feed and equipment) by providing a variety of resource supports through scale-related pricing incentives.

In terms of regulatory demands, governing bodies continue to escalate the degree of regulations and reporting in regards to food safety. The cost of necessary resources and restrictive regulatory policies further encourage the development of more specialized farming entities. In turn, this specialization discourages farmers in each of the different agricultural sectors from collaborating with and/or learning from one another, since they perceive they have less and less in common.

ii. Operational implications:

a. Short-term challenges

The number of responsibilities that farms are being held accountable for continues to escalate. The escalation of responsibilies is not unique to family farms, but as essentially small resource-constrained entities (Welsh & White, 1981), they are often not as capable in responding to the expanding list of explicit requirements and implicit expectations that include:

- Regulatory stipulations (i.e., inspections, environmental protocols, income/corporate taxes, health and safety, workers compensation, animal welfare, labour laws, feed and livestock traceability programs, soil management, trucking regulations, accounting procedures, banking covenants, insurance).
- Media-generated perceptions that farmers are significantly responsible for chemical imbalances in the natural environment (e.g., phosphorus levels in Lake Winnipeg) (Kusch, L., 2011; MPEC, 2006).
- Tensions between rural and urban communities as centres of power primarily reside in urban areas where regulatory policy is determined. Rural communities perceive a lack of sensitivity by urban policymakers in the development of regulatory policies relating to crop residue burning, sewage treatment systems, agricultural odours, and other agricultural operations.
- Decision dilemmas resulting from catastrophic situations (e.g., deciding whether or not to re-enter a particular agricultural market following government or insurance payouts for diseased livestock, failed crops, flooding, or drought).
- Challenges related to balancing farm ownership and operational control of the farm (i.e., the differentiation between shares of ownership and daily operational responsibilities and determining when to transfer ownership and/or operational responsibility to the next generation).
- Increasing degree of emotional stress resulting directly from farming responsibilities.

b. Long-term challenges

Without the resources and/or ability to manage and adequately address the short-term challenges, the long-term ramifications are quite daunting resulting in one of four basic future scenarios illustrated in Figure 4.2.

- Remaining in the industry as a viable farming operation with the potential to grow.
- Remaining in the industry, but unviable with depleted resources and value.
- Exiting the industry through liquidation to a competitor or new purchaser.
- Exiting the industry by selling at a discount or as the result of bankruptcy.

iii. Principal motivation: To maintain the family farm

A final finding from the interviews concerned the importance of keeping the family farm a family-specific going concern. Despite the increasing difficulties for family farm sustainability, there is a strong degree of resilience that appears to be driven by a desire to hold onto land that has been in the family for generations. It may be best described as a "kingdom perspective" (Mitchell & O'Neil, 1998) where one desires to be in the position of controlling one's own destiny, even though it may not appear to be entirely "rational" from a modern business perspective.

From a global perspective, family farms that have survived through the twentieth century have gone through significant change (Brookfield & Parsons, 2007). For many family operations their survival and/or success is largely attributable to pluriactivity. More specifically, they have diversified their activities to include both on-farm and off-farm income sources. Moreover, while farming remains a central household activity, the off-farm incomes are increasingly critical in allowing the farm to continue (Brookfield, 2008). In this way, family farm profitability appears not as critical for the farm's continued existence.

4.5. Research design: Survey Data Collection

The principal approach I used in this dissertation is quantitative in nature with some supplementary aspects that are more qualitative in nature. These qualitative aspects, collected primarily through open-ended questions, serve to help explain quantitative results, as well as provide a validity check on other specific behaviour measures that were used in the study. While the qualitative data could prove to be a rich source of information for further study, this was not the primary approach used in the dissertation.

To collect data and test my hypotheses I conducted this research using a primary survey tool. This survey sampled an industry-wide set of family farm producers. Survey participants in this study were engaged through a regional producer lobby group, *Keystone Agricultural Producers* (KAP), and several commodity based associations or marketing cooperatives, including: *Keystone Potato Producers Association (KPPA)*, *Manitoba Canola Growers* (MCG), *Manitoba Egg Farmers* (MEF), *Manitoba Beef Producers* (MBP), *Winter Cereals Manitoba Inc.* (WCMI), *Manitoba Pulse Growers Association* (MPGA), *Manitoba Pork Council* (MPC), *h@ms Marketing Services* (HMS), *Manitoba Chicken Producers* (MCP), *Manitoba Turkey Producers* (MTP), *Dairy Farmers of Manitoba* (DFM), *Manitoba Seed Growers Association* (MSGA), *Manitoba Forage Council* (MFC), *Manitoba Sheep Association* (MSA), *National Sunflower Association of Canada* (NSAC), *Peak of the Market* (PM), *Prairie Fruit Growers* (PFG), *Prairie Oat Growers Association* (POGA), and *Registered Seed Merchants* (RSM).

Responses from the survey were used to answer the research questions as identified in Chapter 1 by measuring the: (1) strategy for family continuity, (2) generational perspectives on succession challenges, and (3) degree of engagement in environmentally sustainable farming

practices. In addition several individual and farm-level demographic descriptors such as respondent age, gender, farm size, and farm type were also collected.

The survey was developed in both an on-line and paper copy format, and respondents were given a choice of responding on-line or having a paper copy mailed out.

4.6. Survey Study: Cross-sectional, single respondent

4.6.1. Sample Respondents

A key aspect of this dissertation concerns the impact of intergenerational behaviours on current business management practices and environmentally sustainable farming practices across all sectors of the industry. Therefore it was important to attract respondents from the various sectors of the agricultural industry. Drawing in the appropriate respondents was accomplished through soliciting respondents via *Keystone Agricultural Producers* (KAP) and the previously detailed list of commodity organizations. KAP is a general farm lobby organization and has the broadest reach among agriculture-based associations in Manitoba. A key factor in connecting with a representative sample is to enlist the endorsement of the directors of these organizations as both survey participants and sponsors because they are the most knowledgeable and engaged producers in each of the agriculture sectors. This strategy was used to ensure a representative sample of the larger farm population as provided in Table 4.1.

One practical challenge in obtaining a representative sample arises from respondents being differentially motivated to respond to different parts of the survey (i.e., leverage) and by the degree of emphasis placed on each aspect by the researcher (i.e., salience) (Groves, Singer & Corning, 2000). As Dillman (2009) states, “The leverage-saliency theory approach suggests that an overemphasis on a single appeal that is attractive to some potential respondents but not others may produce serious nonresponse error if it is related to an important variable of the study”

(2009: 21). Therefore, to attract all types of survey recipient responses, it is important to appeal to respondents from a broad base that includes both economic and social exchange perspectives.

4.6.2. Recruitment strategy

I collected data for a representative sample of Manitoba family farm operations through the use of an online and hard copy survey designed in accordance with Dillman's Tailored Design Method (Dillman, 2007; Weisberg, 2005). This approach builds respondent trust, develops perceptions of increased rewards with reduced costs for participating, and also reduces survey error. In addition, farm census data was collected from provincial publications (MAFRI, 2010) and Statistics Canada (Mitura & Trant, 2006; Saha & Trant, 2008; Saha & Mitura, 2009), to be used as a validity check for survey results.

Potential survey participants were invited to complete the online or hard copy survey through a number of communication channels. First, I had the opportunity to address the KAP Commodity Group at a meeting in Winnipeg on Oct. 31, 2011. This meeting was attended by representatives of the various commodity groups that work together with KAP and it was suggested that I consider contacting the various commodity based associations to make sure I was not missing any segments of farm families that may not be members of KAP. Second, I was able to address the assembled representatives at the KAP Annual meeting on January 26, 2012 in Winnipeg and this provided me with an opportunity to meet KAP delegates and farm producers during their breaks between meeting sessions. Third, I used a posting in the weekly KAP newsletter, "*KAP Alert*," which is emailed out to approximately 1,000 KAP members. The posting appeared in the *KAP Alert* every week for one month February 24-March 30, 2012. Fourth, I participated in a number of agricultural-based tours. These included (1) the Manitoba Forage Seed Association (MFSA) Pasture Tour on July 10, 2012, (2) the Manitoba Provincial

Pasture Tour sponsored by the Manitoba Forage Council (MFC) on July 25-26, 2012, and (3) the Manitoba Pulse Growers Association (MPGA) Pulse Tour in Morden on August 4, 2012. Fifth, I made hundreds of phone calls directly to farmers using contact information obtained from Manitoba directories or websites listing directors or members. These organizations or associations included those organizations listed above in section (4.5). Finally, invitations were distributed through various commodity group newsletters and communiques.

The critical aspect of achieving good response rates on the survey centres on an organized and clearly presented sequence of mutually supportive requests to questionnaire recipients that are constructed upon social exchange theory. As Dillman (2007) notes, "simply stated, *rewards* are what one expects to gain from a particular activity, *costs* are what one gives up or spends to obtain the rewards, and *trust* is the expectation that in the long run the rewards of doing something will outweigh the costs" (2007:14).

The potential *reward* respondents may receive from participating in this research is primarily intrinsic in nature. The request appeals to their desire to be appreciated by society and/or their colleagues. In contributing to research on family farm succession, they may also be benefiting their future family members. The potential financial incentive (one of five-$100 prizes for on-line survey completion, or a $5 coffee card for taking a hard copy mail-in survey) recognizes their contribution of time towards the research process. See the survey advertisement and invitation in Appendix 2. The potential *costs* include the amount of time it will take to complete the survey and the degree of vulnerability repondents may feel in disclosing family and farm information. It was anticipated that the reassurance of confidentiality and the receipt of summarized findings would also help to minimize any adverse emotional cost impact. In working together with KAP I anticipated that their endorsement of the research process,

indicating that results from the research will be useful to the membership, would help establish *trust* between the researcher and respondent.

Unsolicited requests made by the researcher through website postings, newsletters or communication inserts were the least effective. Face-to-face contact or voice-to-voice communication on the phone resulted in the most effective way of gaining survey participants. Through the personal connection I was able to communicate a message that seemed to resonate with the farmers and there was a greater sense of trust on their part, which translated into their completing the survey. Appendix 3 provides a typical script I used for phone or face-to-face conversations.

4.6.3. Development of the research instrument

The development of the questionnaire was an iterative process. It began with amassing all the questions of interest related to (1) personal information, (2) corporate details, (3) farm operational inputs, (4) environmental sustainability practices, (5) farm production outputs, (6) family business succession intentions and actions, (7) time horizon measures, (8) intergenerational behaviour constructs, and (9) stress-related measures. Where established scales had been published, these were adapted, if necessary, to fit with the agricultural context. Some areas required scale development where I used relevant literature to form questions and also consulted with my advisory committee to establish proper measures. *Census of Agriculture*, and *Agriculture and Agri-Food Canada* reports were useful to ensure proper agricultural terms and language were being used.

The next step in the process was to determine the order and flow of the various questionnaire sections and particular questions in each section. Determining order and flow

required several drafts to establish a document that could then be pre-tested with industry experts and sample farm families.

4.6.4. Pre-testing of the research instrument

The questionnaire was pre-tested in two ways. First, a pre-test of the questionnaire draft was reviewed by representatives from *KAP*, *Manitoba Pork Council* and *Signature Mediation*. These were the three organizations I interviewed in the development of the dissertation topic. After they reviewed the survey they were asked to comment on the survey's length, relevance, validity, comprehensiveness, and comprehensibility. The questionnaire was then modified in accordance with feedback from these industry advisors. Moreover, I also discussed the role they could have in endorsing the research, and the size of any monetary incentive that might be offered for participating in the survey.

The second round of pre-testing was carried out with six farm families. Contacts were established through *KAP* recommendations, the *Red River Exhibition Association* Family Farm of the Year awards, and the author's personal contacts. This feedback indicated that the draft questionnaire was too long and would need to be shortened to minimize respondent fatigue. Some respondents also noted that particular questionnaire sections (farm finances) may probe information that respondents would consider as "too sensitive", while other sections (environmental practices) may generate respondent anxiety since some farmers perceive themselves to have been unfairly isolated as primary contributors to the environmental challenges in the province. The questionnaire was again modified and shortened to minimize respondent fatigue and anxiety.

A copy of the online survey can be found at http://tinyurl.com/nfrh7j8 with a hard copy of the survey found in Appendix 4. Table 4.4 provides a summary of the operationalization and measurement of the variables.

4.6.5. Independent variable: Family business continuity strategy (All hypotheses)

The important role that succession intention plays in family business was introduced in Chapter 2. As succession requires the transition from one generation to the next, it is useful to measure intentional characteristics of both the incumbent and the successor, as cooperation between the two generations is necessary for a successful transition (Venter, Boshoff & Mass, 2005). Building on the succession measurement work by Sharma, Chrisman and Chua (2003b), respondents were asked to respond to a set of family farm adapted statements that assess both the intent and action activities that have occurred or are currently underway in their farm operation. These are specifically actions related to (1) the intention to remain a family enterprise, and (2) the actions necessary to identify, select and train the successor(s) with the appropriate skills for the leadership position. Responses were measured on a five-point Likert-type scale, ranging from "strongly disagree" to "strongly agree".

i. Intention to remain a family enterprise

As identified in the discussion regarding succession above, the core challenge in family business progression concerns agreement by the generational representatives on the need for family to continue in ownership and leadership of the enterprise. These four statements measured whether both the incumbent and successor desired to keep the business in the family and moreover, work toward the same end purposes in both business and family relationships or

whether there was consideration to divest of the business to someone outside the family (Q21[2-5]).

ii. Successor identification, selection and training

This construct attempts to capture the extent to which a family firm has planned, or is planning for the selection and training of a competent successor. As Dyck, Mauws, Starke, and Mischke (2002) illustrate through the analogy of a relay race, this is determining the *sequence* by "ensuring the successor has the appropriate skills and experience to lead the organization in its next phase" (2002:144). These three statements probed the degree to which specific individuals have been (1) identified as a successor, (2) trained for the job using particular criteria, and (3) familiarized with the operations and people employed at the farm (Q22[1-3]).

Identifying a successor is only the first part of a business strategy going forward. But the organization is best served by having more detailed plans for how the farm will function and what strategic direction it will pursue, whether just in vague conceptual form or more specific facets. One statement probed the degree to which future farm business strategy has been discussed and prepared for implementation (Q22[5]).

Having an identified successor and post-succession plan should enhance communication with key stakeholders. Communicating the critical aspects of how the family business will continue under new family leadership is likely to be highly correlated with the family's commitment to the business. The final statement measures the degree to which the successor is familiar with all of the employees in the farm operation (Q22[4]).

4.6.5.1. Family business succession intention: Validity check

Respondents were also asked a number of questions that explore the extent of their succession planning, which also serve as a validity check for the independent variables (Q19-

Q20). These questions included the degree to which they have been thinking about succession as well as an open-ended query of their single most important factor to be concerned about when thinking of passing on their farm operation to the next generation. Respondents were also asked to express their degree of agreement with a number of statements relating to the whether the farm was for sale and whether they had considered a recent sale offer (Q30[3-5]).

4.6.6. Dependent variable: Environmentally sustainable farming practices and environmental citizenship behaviour (H_1)

To date there is no standardized measure of environmentally sustainable farming practices, but rather, only a series of practices that are monitored to gauge environmental impact. To assess the degree of sustainable practices, I developed survey questions that first of all measured the intent of environmental citizenship behaviour (ECB) and then captured the actual environmentally sustainable farming practices (ESFP).

The statements designed to measure the degree of ECB were structured around the five organizational citizenship behaviour (OCB) dimensions. Sample questions for each dimension include (1) conscientiousness – "On our farm we comply with environmental rules and regulations even when no one is watching," (2) sportsmanship – "A lot of our time on the farm is taken up by completing environmental regulations," (reverse coded), (3) civic virtue – "We consider agricultural association meetings to be important," (4) courtesy – "We generally seek to solve problems with environmental regulations as early as possible," and (5) altruism – "We are generally ready to lend a helping hand to our neighbours" (Q25[1-13]). The statements were general enough to cross the various agricultural sectors, yet specific enough regarding behaviours that pertain to issues of agricultural environmental responsibility. Responses were measured on a five-point Likert-type scale, ranging from "strongly disagree" to "strongly agree".

The monitored practices developed by researchers in Canadian agriculture (McRae, Smith & Gregorich, 2000) include two primary components: (1) *Conservation*, that is, how well the agriculture community manages and conserves natural resources, and (2) *Compatibility*, that is, how compatible agricultural systems are with natural systems and process. This agriculture research has resulted in identifying broad areas where sustainability assessment must be considered. McRae et al.'s (2000) framework includes sustainability in relation to (1) market-based forces that influence agricultural activities, (2) environmental outcomes of these activities, and (3) societal responses to actual and perceived changes.

Moreover, the increasing awareness regarding the natural environmental impact is also the result of changes in the size and number of farms. As noted earlier, the number of farms has decreased while the average farm size has increased (see Table 4.3). Larger and more intensive operations have increased awareness of the fundamental links between agriculture and the environment (Eilers, MacKay, Graham & Lefebvre, 2010). As a whole, initial indicators developed by *Agriculture* and *Agri-Food Canada* suggest that producers are responding to environmental concerns and progress is being made towards environmental sustainability (Eilers, MacKay, Graham & Lefebvre, 2010). Building on this research, I developed a series of questions to measure the degree of participation by each farm in the five categories identified by *Agriculture* and *Agri-Food Canada*. In the section that follows, I identify and describe each of these categories. My objective is twofold: (1) to test for the awareness of each category's importance and (2) to measure the degree of compliance.

i. Farm land management (Q26)

These indicators concern soil coverage by crops and residue, and management of the farm nutrient and pesticide inputs. Crop nutrients and pesticides are used to improve crop

production. Indicators are required to monitor and manage the optimal balance of fertilizer, manure and pesticide usage.

In addition, farm land management also concerns the loss or alteration of wildlife habitat, which has led to the reduction of wildlife species and more broadly, a decrease in biodiversity. Agricultural, versus urban lands, offer better habitat for wildlife. Each of the primary agricultural land use categories (i.e., cropland, summerfallow, tame or seeded pasture, natural land for pasture, and all other land) can be considered for its use as appropriate wildlife habitat.

ii. Soil health (Q27)

These indicators concern water erosion, wind erosion, tillage erosion, organic carbon, soil compaction, and soil salinization. Controlling erosion by water or wind helps to protect both soil and water quality, as erosion results in the loss or redistribution of topsoil and the degradation of waterways. The loss of the soil's organic carbon leads to less fertility and greater erosion whereas the addition of carbon stores can help reduce the accumulation of carbon dioxide (greenhouse gas) in the atmosphere. In addition, soil salinity is the result of excess soluble salts in the crop roots, which deter plant growth.

iii. Water quality (Q28[1-3])

These indicators concern water contamination by nitrogen, phosphorus, coliforms and pesticides. Nitrogen is an essential nutrient for crop growth when it is in its soluble form, such as nitrate. But, nitrates can also leach into the groundwater, which is a primary source for drinking water and can therefore be potentially harmful to humans. Phosphorus that is transferred into surface water can cause excessive growth of algae and aquatic plants, reduced oxygen levels in water, and harmful changes to species composition in the aquatic ecosystem. Animal manure applied to fields as fertilizer is an effective way of using waste, but the challenge is that is can

also be the source of coliforms and pathogens. This particulate matter is known to produce viruses and bacteria that are a danger to human health. Finally, pesticides can also have harmful environmental and human health implications.

iv. Air quality and greenhouse gas emissions (Q28[4])

These indicators concern the build-up of atmospheric concentrations of greenhouse gases, particularly nitrous oxide, methane and carbon dioxide, and the impact of odour from agricultural activities. The uncontrolled build-up of these gases is believed to create a greenhouse effect, which potentially causes climate change and adversely affects air quality (Desjardins et al., 2008; Janzen et al., 2008). While not creating toxic reactions, odour nuisance can adversely affect quality of life through harmful physical symptoms and social conflict with neighbouring land users.

v. Production intensity (Q28[5-7])

These indicators concern the application of more nitrogen than what is required for crop production and the sustainability of new energy technology systems being applied to generate improved energy efficiencies. The measure of residual nitrogen is the difference between the amount of nitrogen available to the growing crop and the amount removed in the harvested crop. Reducing residual nitrogen also reduces the movement of nitrogen into the atmosphere as ammonia and nitrous oxide and minimizes air quality damage. A relatively fixed land base and increasing global demand for crops means continual pressure to find more efficient energy costs. In general, the objective is to reduce energy inputs and increase agricultural outputs.

4.6.6.1. Environmentally sustainable farming practices: Validity check

Respondents were also be asked a number of questions that explore the extent of their environmentally sustainable farming practices, which served as a validity check for the

dependent variable of environmentally sustainable farming practices. These questions included an open-ended query of the environmental regulations that they face in their farming operation (Q24), as well as specific types of alternative technologies they are currently using (Q29). As a check for bias and validity, respondents were also queried about the extent to which they felt overwhelmed by all that is involved in complying with existing environmental regulations (Q25[14]).

4.6.7. Moderating variables: Industry context (H_2)

Industry context has been described as resource munificence and family farm product mix. Munificence, as described above in Chapter 3, refers to the task environment carrying capacity. In other words, munificence is the extent to which the organization can support sustained growth (Starbuck, 1976; Aldrich, 1979; Rothenberg & Zyglidopoulos, 2007). In calculating munificence, I adopted the measurement methods as used by Dess and Beard (1984) to capture the relative rate of industry profitability. The variables I collected are based upon the respondent's farm profitability (Gross Farm Receipts-Q33 less Farm Operating Expenses-Q35), and net equity (Total Current Market Asset Value-Q31 less Total Related Debt-Q32).

The family farm product mix was determined through the respondent's self-selection from the list of NAICS codes for farm categorization used by Statistics Canada.

4.7. Conclusion

Chapter 4 described my rationale and methodology for (1) selecting the Manitoba agricultural farm industry for my study's context, (2) using information from the five exploratory industry association interviews, (3) assembling the overall study design and the process of instrument development, (4) making use of the pre-test to critique the validity of both basic

instrument design and specific survey measures, and finally (5) developing the operationalizations of all relevant variables.

The subject of succession in family business remains a central issue in family business research, as it is so critical for maintaining the longevity of the enterprise. Aside from this crucial role, the intention to pass on the family business to the next generation and the related succession actions appears to play a significant role in terms of planning time horizons, intergenerational behaviour, and environmentally sustainable farming practices. The next chapter reports the analysis carried out on the data.

Table 4.1 – 2011 Distribution of Manitoba farms by type

Percentage of Total Manitoba Farms by Industry Group – 2011			
Oilseed/Grain Farming	41.7%	**Greenhouse/Nursery/Floriculture**	1.6%
Cattle Ranching/Farming	28.3%	**Poultry and Egg Producers**	1.6%
Other Crop Farming	13.1%	**Vegetable and Melon Farming**	1.2%
Other Animal Producers	8.7%	**Sheep/Goat Farming**	1.2%
Hog/Pig Farming	2.0%	**Fruit/Tree Nut Farming**	0.6%

(Note: Farm Type includes all farms with gross sales receipts greater than zero)
Source: Census of Agriculture, Statistics Canada; Knowledge Management Industry Intelligence Section, MAFRI, 2012

Figure 4.1 – Integrative Model of Farming Demands & Stress

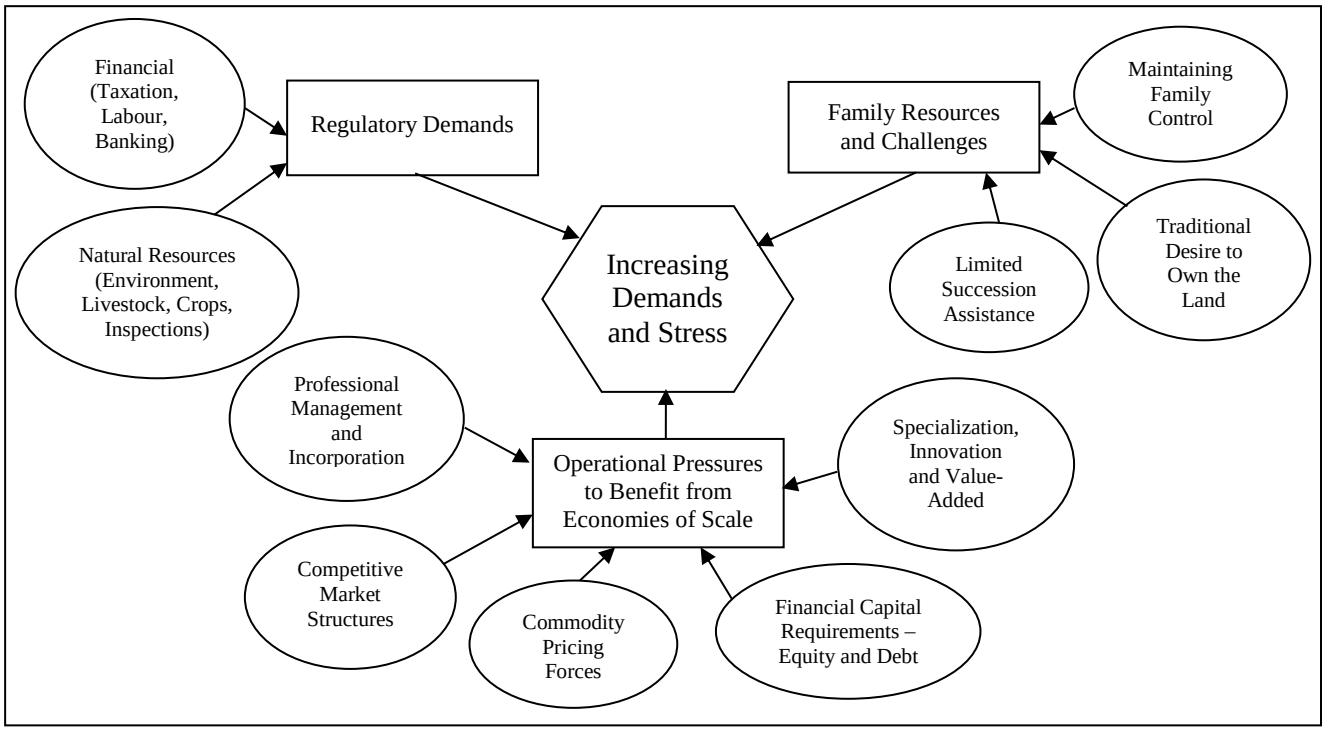


Table 4.2

Summary of Significant Comments from Semi-Structured Interviews

Organization	Contacts	Organizational Mandate	Significant Comments
Keystone Agricultural Producers (KAP)	Yvonne Rideout – General Manager James Battershill – Policy Analyst	Keystone Agricultural Producers (KAP) is a democratically controlled general farm lobby organization which represents and promotes the interests of agriculture and agricultural producers in Manitoba[2]	• *Farms need to be healthy to successfully pass them on.* • *Farmers are looking for answers to the question, "How can I be viable as an independent operator?" and "What will make it attractive for the next generation?"* • *High debt loads are a critical source of stress. These financial challenges also make ownership vs. control decisions that much more difficult.*
Manitoba Agriculture Food and Rural Initiatives	Grant Palmer – Policy Economist	MAFRI works with rural and northern communities to accelerate the greater prosperity and capacity of agricultural producers, other entrepreneurs, industry and rural and northern communities. We do this by providing leadership and a range of information, programs and services in support of vibrant rural and northern communities.[3]	• *We provide many different program support systems that offer subsidies to convert to best practices (i.e., fertilizer bins, GPS technology, straw management, and separation of livestock and waterways)* • *I see very limited planning for succession. There is a reluctance to have the difficult conversation with family members, which only increases the level of stress.*

[2] Keystone Agricultural Producers website, http://kap.mb.ca/about.html, downloaded August 16, 2011.
[3] Manitoba Agriculture, Food and Rural Initiatives website, http://www.gov.mb.ca/agriculture/intro/about01.html, downloaded August 17, 2011.

Table 4.2 cont'd

Organization	Contacts	Organizational Mandate	Significant Comments
Manitoba Pork Council	Andrew Dickson – General Manager	Fostering the sustainability and prosperity of the pork industry for the good of hog farmers and all Manitobans[4]	• *Typical family farms had pork as part of the whole farm operation. As the industry has grown, the family farm is now competing with a group of investor and operations that are managed by professionals.* • *The traditional family farm is not sustainable. As rural people were not prepared to live in poverty, they have implemented dramatic improvements and advancements to help distinguish themselves from their competitors.* • *How to bring family into the business is challenging.*
Manitoba Rural Adaptation Council Inc. (MRAC)	Ted Eastley – Executive Director	The Manitoba Rural Adaptation Council (MRAC) is a private not-for-profit corporation that administers Agriculture and Agri-Food Canada funds for innovative agricultural projects and acts as a catalyst to stimulate industry and government activity where gaps are identified[5]	• *New leaders and mentors are needed to replace aging leaders and are critical for developing and reenergizing vibrant rural communities. The ensuing social infrastructure is important for encouraging the new generation. Too often its slow development is a major impediment to the return of young farmers.* • *There is a role for the independent advisor to assist in the family transition process.* • *Those young farmers who are returning to the farm come with a more diversified attitude.*

[4] Manitoba Pork website, http://manitobapork.com/manitoba_pork_council.aspx, downloaded August 16, 2011.
[5] Manitoba Rural Adaptation Council Inc., http://www.mrac.ca/content/about-us, downloaded August 16, 2011.

Table 4.2 cont'd

Organization	Contacts	Organizational Mandate	Significant Comments
Signature Mediation	Gerry Friesen – Private Mediation Consultant	Although the past is important and issues from the past must be dealt with the focus of mediation is to determine how the parties will live in the present and head into the future. Mediation is a voluntary process in which two or more parties meet with an impartial mediator to discuss issues, better understand conflict, explore options and settle on outcomes.[6]	• *In reflecting on the mediation work I've done, situations have worsened. The level of emotions has increased and the intergenerational factor is part of it.* • *There is a distinct gender difference among farmers where depression is a more prominent issue for men. Women handle it differently.* • *Mediation often has very frustrating results as creditors are not patient or hopeful. It is best if the producer is able to sell as the creditor is not interested in ownership or environmental liability.*

[6] Signature Mediation website, http://www.signaturemediation.ca/index.htm, downloaded August 17, 2011.

Table 4.3 – Summary of Manitoba Agriculture Statistics

	1996 Census	2001 Census	2006 Census	2011 Census
Farm Land	19,106,531 acres	18,784,407 acres	19,073,005 acres	18,023,472 acres
Number of Farms	22,456	19,818	19,054	15,877
Average Farm Size	784 acres	891 acres	1,001 acres	1,135 acres
Farm Population*	79,835	68,135	62,930	N/A
Total Manitoba Population	1,113,898	1,119,583	1,148,401	1,208,268
Individual/Family Farms	15,340	12,322	10,866	9,041
# of Corporations (family)	1,719	1,936	2,301	2,490
# of Corporations (other)	372	356	361	307
Average Age of Operators**	47.9	49.4	51.2	53

*Refers to all persons who are members of a farm operator's household, living on a farm in a rural/urban area.
**Those persons responsible for the management decisions in operating an agricultural operation. Can be owners, tenants or hired managers of the agricultural operation, including those responsible for management decisions pertinent to particular aspects of the farm.

Source: Statistics Canada, Census of Agriculture, 1996, 2001, 2006 & 2011; Industry Intelligence, MAFRI, 2012

Figure 4.2 – Long-term choices for farm owners

Farm's Competitive Viability

Choices	Viable	Unviable
Remain	• Sustainable Operation • Potential to Grow	• Declining Operation • Depleted Resources & Value
Exit	• Sell to Competitor • Liquidation	• Sell at discount • Bankruptcy

Table 4.4 – Summary of Variable Operationaliztions

Hypothesis Number	Construct	Variable Type	Operationalization	Source	Survey
H_{1a}; H_{1b}; H_{2a}; H_{2b}; H_3	Family Business Continuity Strategy	Independent Variable	Intention and action questions adapted for family farm context	Adapted from Sharma, Chrisman & Chua, 2003b	Section 5 – Vision of Farm's Future (Q18) & Section 6 – Plans for Farm's Future (Q19-Q22)
H_{1a} – *There is a positive relationship between the family-related succession strategy to pass on the family business to the next generation and the* ***intention to engage in environmentally sustainable farming practices****.* H_{1b} – *There is a positive relationship between* ***intentions to engage in environmentally sustainable farming practices and the actual enactment of those practices****.*	Environmental Behaviour	Dependent Variable	Survey questions regarding Environmental Citizenship Behaviour (ECB) and specific Environmentally Sustainable Farming Practices (EFSP)	Yoon and Suh, 2003; Podsakoff, MacKenzie, Moorman and Fetter, 1990; Federal & Provincial reports & regulations on environmental impact of agriculture activities	Section 7 – Environmental Farm Management Practices (Q23-Q28)
H_{2a} – *The relationship between the succession strategy to pass on the family business to the next generation and environmentally sustainable farming practices is moderated by the* ***resource munificence*** *(i.e. the greater the degree of munificence, the greater the degree of environmentally sustainable farming practices).*	Moderating Variables	Industry Context ▪Resource Munificence	Survey questions regarding resource munificence and family farm product mix and associated regulatory compliance.	Adapted questions from Dess & Beard (1984) relating to financial resources.	Section 8 – Financial Performance (Q29-Q36)
H_{2b} – *The relationship between the succession strategy to pass on the family business to the next generation and environmentally sustainable farming practices is moderated by the* ***type of farming operation*** *(i.e. the higher the number of environmental regulations the farm type is subject to, the greater the degree of environmentally sustainable farming practices).*		▪Farm type		Farm product mix and associated regulatory requirements.	Section 4 – Farm Operations (Q17)

Operationalization of focal element is shown in **bold font**

Table 4.4 – Summary of Variable Operationaliztions cont'd

Hypothesis #	Variable	Construct	Measurement	Source	Survey
H_3 – *The relationship between the succession strategy to pass on the family business to the next generation and environmentally sustainable farming practices is moderated by the* ***affinity between the generations*** *(i.e. the greater the degree of affinity, the greater the degree of environmentally sustainable farming practices).*	Moderating Variables	Intergenerational Behaviour ▪Affinity	Degree of affinity for future family owners in response to adapted statements pertaining to children as future owners	Adapted from Wade-Benzoni, 2008	Section 6 – Plans for Farm's Future (Q23)
H_{1a}; H_{1b}; H_{2a}; H_{2b}; H_3	Control Variables	Controlling for: ▪Farm Type ▪Farm Age ▪Farm Size	Survey questions regarding family farm product mix, farm age and farm size.	Farm product mix, year family started farming and farm operation size in acres.	Section 4 – Family Farm's Operations (Q17) & (Q15) Section 2 – Family's Involvement on Farm (Q9)

Operationalization of focal element is shown in **bold font**

5. Data Collection, Analysis Methodology, and Corresponding Results

5.1. Industry Setting

I tested the proposed model using survey data that was collected from the family farm community in in the province of Manitoba, Canada. The variety of respondents participating represented all sectors of provincial agriculture, as well as geographic regions of the province. Table 5.1 lists the various descriptive statistics regarding the survey participants with the respective comparisons to the provincial family farm population and Figure 5.1 illustrates the geographic coverage of survey responses.

Respondents were invited to participate in the survey through a number of research initiatives (i.e., direct contact via phone or in person by the primary researcher, commodity group newsletter advertisements, direct mail invitations) and could complete the survey via a secure website or through a paper-based mail-in survey (81% - website; 19% - paper). Those choosing the paper version were uncomfortable with online technology or indicated that their rural location did not have adequate Internet service to make the use of a website-based survey as proficient. A comparison between the two samples on respondent age, farm age, and farm size in acres, as well as for measures used for succession intention and action, environmental citizenship behaviour, and environmentally sustainable farming practices all showed non-significant differences between the two collection methods.

This particular industry sector was selected because of the large percentage of family-based organizations and the increased pressure the industry is facing in regards to environmental sustainability issues.

The agriculture community in Manitoba is quite ably represented by a regional lobby group (Keystone Agricultural Producers – KAP) whereby I was able to gain good access to its

members. Thus, the study setting provided an invaluable opportunity to model how family business succession and management issues regarding environmental sustainability might be connected.

5.2. Data Collection

In collecting this data set, I mostly followed the prescriptions of Dillman (2009). I initially developed a questionnaire by identifying construct items from previous studies. Questionnaire development was followed by interviewing a number of farmers and representatives from various agricultural commodity associations and/or lobby groups to develop and adapt items, refine survey wording, and check the overall validity of questions vis-a`-vis their industry environment. Following the administration of the survey with an initial test group, the survey tool was significantly refined and shortened to ensure a better survey completion rate. I received 216 substantially completed surveys. The number of direct exchanges I made with potential participants through face-to-face conversations, phone calls or emails amounted to approximately 331contacts, providing a response rate of 65.3%.

The sample used in the study would be characterized as a convenience sample rather than a random sample. My approach was to initiate contact with potential respondents through existing farm and/or commodity associations as I did not have another direct method to access all Manitoba family farms whereby a sample could be developed through random methodology. My experience was that if I had the opportunity to actually speak with the farmer and explain the purpose of my research, there was a willingness to participate, as the topic seemed to resonate and due to the fact that my research request was associated with my education and not a regulatory process, the farmer expressed an inclination to help me out. I left many phone messages and was quite surprised and pleased with the number of people who returned my call.

The total number of responses is approximately 2.4% of the total Manitoba family farm population.

5.3. Measures

5.3.1. Family Farm Succession

As argued in Chapter 2, it is important to measure both the intention and action related to family farm succession. In addition to putting the necessary plans in place, specific succession behaviour also needs to be evident. This transfer of both ownership and leadership includes (1) selecting and training a successor, (2) developing a vision or strategic plan for the company after succession, (3) defining the role of the departing incumbent, and (4) communicating the decision to key stakeholders (Sharma, Chrisman & Chua, 2003b). I asked the respondents to indicate the degree to which they were both planning for succession and then acting on those plans. They were asked to respond to a set of adapted statements that assess levels of succession planning activities that have occurred or are currently underway in their business. These are specifically actions related to (1) successor selection and training, (2) post-succession business strategy, (3) post-succession role of the incumbent and, (4) dissemination of the succession decision. Responses were measured on a five-point Likert-type scale, ranging from "strongly disagree" to "strongly agree". Table 5.3 provides the descriptive data results from the survey questions pertaining to family farm succession.

5.3.2. Environmentally Sustainable Behaviour

i. *Environmental Citizenship Behaviour (ECB)*

To measure the degree environmental sustainability in the family farm sector I measured a form of Organizational Citizenship Behaviour (OCB) (Podsakoff & MacKenzie, 1994; Yoon & Suh, 2003; Baker, Hunt & Andrew, 2006; Lin, Hung & Chiu, 2008). This adapted measure

assessed issues of the environmental sustainability in the agricultural context. At the time this research was started there was no standardized measure of Environmental Citizenship Behaviour in the agricultural context so I adapted the OCB scale and questions to measure for commitment to environmental sustainability. The revised OCB measurement, what I have labeled as ECB, is a multi-item scale that considers the dimensions of (1) conscientiousness, (2) sportsmanship, (3) civic virtue, (4) courtesy, and (5) altruism. Responses were measured on a five-point Likert-type scale, ranging from "strongly disagree" to "strongly agree".

ii. ***Environmentally Sustainable Farming Practices***

As with Environmental Citizenship Behaviour, there is no standardized measure of specific environmentally sustainable farming practices (ESFP). There are only a series of practices that have been historically monitored by regulatory agencies to gauge environmental impact. I therefore developed survey questions that attempted to capture these practices and serve as a type of index of ESFP. The monitored practices developed by researchers in Canadian agriculture (McRae, Smith & Gregorich, 2000) includes two primary components: (1) Conservation, that is, how well the agriculture community manages and conserves natural resources, and (2) Compatibility, that is, how compatible agricultural systems are with natural systems and process. This research has resulted in identifying broad areas where sustainability assessment must be considered. The questions developed probed for specific practices that related to (1) Farm land management, (2) Soil health, (3) Water quality, (4) Air quality and greenhouse gas emissions, and (5) Production intensity. Responses were measured on a five-point Likert-type scale, ranging from "never" to "very often" and respondents did have the option to indicate that the practice did not apply to their particular farm operation. While this measure has been developed more like a standardized scale, it may require more development to

rather be used as an index. Table 5.4 provides the descriptive data results from the survey questions pertaining to environmentally sustainable behaviour.

5.3.3. Relational Affinity

One of the potential moderating variables is relational affinity. The proposed intention-behaviour relationship assumes a strong affinity between generational family members. I measured the degree of affinity through questions that probe for the respondents' actual perceptions of affinity between generations. Wade-Benzoni (2008) argues that an "affinity" to future generations can narrow the gap between generations as it combines "empathy, perspective-taking, and perceived oneness" whereby the present generation feels empathetic toward future generations and feels they have a better understanding of how their actions will impact future generations.

To measure the degree of affinity respondents were asked to indicate the extent to which they agree with the following four statements using a seven-point Likert-type scale, ranging from "strongly disagree" to "strongly agree". Statements addressing affinity include (1) "My present decisions will benefit the next generation of owners in the near future", (2) "My present decisions will benefit the next generation of owners in the distant future", (3) "I am able to imagine my children as the future owners of this farm", and (4) "I understand the impact that my present decisions have on my children as future owners of this farm" (Q23[1-8]).

5.3.4. Resource Munificence

The other potential moderating variable is resource munificence. I argued in Chapter 3 that resource munificence refers to a measure of the scarcity or abundance of critical resources available to family farms operating within the agricultural sector that can be deployed towards environmentally sustainable farming practices. In other words, munificence is the extent to

which the organization can support sustained growth (Starbuck, 1976; Aldrich, 1979; Rothenberg & Zyglidopoulos, 2007). The measure of resource munificence is therefore determined by the farm's equity, debt, gross farm receipts, and expenses. In calculating munificence, I adopted the measurement methods used by Dess and Beard (1984) to capture the relative rate of industry profitability whereby munificence provides an indication of the farm's ability to meet debt obligations through profitability. The proposed variable of munificence calculated is based upon the respondent's (1) farm profitability in relation to total farm equity (ROE = Farm Net Income/Total Farm Equity) and (2) ability to finance operations (DTE = Total Farm Debt/Total Farm Equity).

5.3.5. Control Variables.

Although I am interested in developing a parsimonious model, other factors that might also influence the relationships stated in Figure 3.1 need to be considered to ensure results were not unjustifiably influenced.

First, I controlled for *farm type.* It is not reasonable to consider that all types of farms will be subject to the same environmental issues. For example, oilseed and grain farmers do not need to be concerned with manure storage methods, whereas livestock producers are not subject to dealing with crop fertilizers and herbicides. Farm type was measured through the respondent's farm type categorization. I categorized the farms into three relatively distinct groups (Oilseed/grain producers – 109 respondents; Cattle/dairy producers – 42 respondents; Mixed farm operations – 61 respondents). Farm type categories were then coded using dummy variables (Oilseed/grain producers – 1; Cattle/dairy producers – 2; Mixed farm operations – 3 with (*k-1*) variables used in the analysis).

Second, I controlled for *farm size* because larger farms might have more resources such as capital, land, livestock, and managerial talent to effectively compete with other producers. Moreover, larger firms have greater flexibility and often more resources to engage in innovation than smaller firms (Duysters & Hagedoorn, 2002). I chose to use size in acres, as opposed to size in livestock number. Within specific livestock categories the number of livestock would be a relevant comparison, but since the survey was across farm industry sectors, acres served as a more consistent measure of size. I used the total number of acres indicated that were used in the various categories of the farming operation. The farms were then categorized into three relatively equally sized groups (0-1,199 acres – 70 respondents; 1,200-2,499 acres – 72 respondents; 2,500+ acres – 71 respondents). Farm size categories were coded using dummy variables (0-1,199 acres – 1; 1,200-2,499 acres – 2; 2,500+ acres – 3 with (*k-1*) variables used in the analysis).

Third, I also controlled for *farm age* because long established farms might have greater years of experience, a more desirable location, and a longer family history of successful operations to survive the fluctuations of the agriculture industry. In contrast to this perspective of firm age, Rosen (1991) indicated that younger companies often engage in more radical (i.e., riskier) innovations, which may be required to deal with environmental concerns. I used the year in which family first resided at or homesteaded on the farm property (2011 – first year). The farms were categorized into three relatively equally sized age groups (0-55 years – 69 respondents; 56-86 years – 69 respondents; 87+ years – 70 respondents). Farm age categories were then coded using dummy variables (0-55 years – 1; 56-86 years – 2; 87+ years – 2 with (*k-1*) variables used in the analysis).

In order to ensure that controlling for size did not unduly categorize respondents into exclusive farm types, I compared these two categorizations using crosstabulations between Farm Size and Farm Type (Table 5.2).

5.4. Structural Equation Model

I performed a structural equation model (SEM) analysis, which, by definition, is a hybrid of factor and path analysis. Use of such a procedure allows simultaneous testing of all relationships in one model and thus a better understanding of relationships among components. To implement the model, I followed recommendations by Anderson and Gerbing (1988) and Geiser (2013). Specifically, in the first stage confirmatory factor analysis (CFA) was used to test whether the variables selected to measure each construct showed convergent validity (i.e., whether items were fairly correlated with one another) and discriminant validity (i.e., whether variables clearly measured different constructs). In the second stage, I computed the structural model, basing it on the measurement model found in the first stage.

5.4.1. First Stage Analysis

A correlation table with means and standard deviations of the hypothesized latent variables, moderating variables, and control variables and is shown in Table 5.5 with each of the hypothesized latent variables illustrated in Figure 5.2 and 5.3. I determined the appropriate use of these particular indicators for each latent variable using Mplus 7.7 and also confirmed support for these findings using factor analysis in SPSS 16. In Mplus the factor loading of the first indicator listed for each latent variable is fixed to 1 by default. The loadings of all the remaining indicators are freely estimated as the default (Geiser, 2013). In addition, as recommended by Geiser (2013), I used full information maximum likelihood (FIML) as the missing data analytic technique, as this method is seen to be more reasonable than listwise deletion.

Strategy for family business succession has been proposed as succession action (SA) with succession intent (SI). To test for this relationship, CFA indicated an acceptable fit for both SI and SA with significant indicator variables. The comparative fit index (CFI) = .96, the Tucker-Lewis fit index (TLI) = .95, the Root Mean Square Error of Approximation (RMSEA) = .012, and the Standardized Root Mean Square Residual (SRMR) = .046. These values indicate an acceptable fit between the model and the observed data (Schreiber, Stage, King, Nora & Barlow, 2006; Geiser, 2013). I also used two additional survey questions as a validity check for succession intention and action. Respondents were asked about how much they have thought about passing the farm on to their children (1-"Not at all" to 4-"A lot") and the degree to which they agreed that their farm was definitely not for sale (1-"Strongly Disagree" to 5-"Strongly Agree"). In comparing responses to both questions with the hypothesized latent variable of SI and SA, there is significant correlation at the 0.01 level (two-tailed) among all the variables listed (Table 5.6). This CFA confirmed earlier exploratory factor analysis (EFA) I had performed with the data using SPSS16, which identified two distinct component factor loadings.

In a similar structure to succession strategy, environmentally sustainable behaviour has also been proposed as intent, as measured by Environmental Citizenship Behaviour (ECB), and action, as captured through Environmentally Sustainable Farming Practices (ESFP). To test for this relationship, CFA indicated an acceptable fit for both environmental citizenship behaviour and environmentally sustainable farming practices with significant indicator variables. The comparative fit index (CFI) = 1.00, the Tucker-Lewis fit index (TLI) = .99, the Root Mean Square Error of Approximation (RMSEA) = .007, and the Standardized Root Mean Square Residual (SRMR) = .034. These values indicate an acceptable fit between the model and the observed data (Schreiber, Stage, King, Nora & Barlow, 2006; Geiser, 2013). This CFA

confirmed earlier EFA I had performed with the data using SPSS16, which identified two distinct component factor loadings.

The results of the first stage of analysis provided initial evidence of good convergent (i.e., whether items were fairly correlated with one another) and discriminant validity (i.e., whether variables clearly measured different constructs).

5.4.2. Second Stage Analysis

In the first stage of analysis I identified four latent variables, SI, SA, ECB, and ESFP through latent regression analysis. The second stage builds on the first stage and involves path analyses with the latent and observed variables resulting from the measurement model obtained in the first stage. I proceeded to use SEM to test the hypothesized relationship between family farm succession strategy and environmentally sustainable behaviour. The results of the proposed model tested are in Table 5.7. To ensure the model was an appropriate representation, I also measured several fit indexes. The typical measures of CFI, TLI, and RMSEA were considered. The model required the use of second-order CFA to measure the proposed influence of succession strategy (STRAT) on environmental behaviour (EB). The use of second-order CFA revealed that SI and SA were significant predictors of STRAT, and ECB and ESFP where significant predictors of EB. The main effect of EB regressed on STRAT was also significant. The proposed path model is displayed in Figure 5.4.

A commonly accepted rule of thumb is that the first two fit indexes (CFI and TLI) should be greater than 0.90 (Anderson & Gerbing, 1988). RMSEAs of 0.05 or less indicate good models. Probability levels on chi-square of 0.10 or higher are generally considered evidence of ideal models (Bentler, 1989). Another model was also tested using the process of parceling, where an item parcel is calculated as “an aggregate-level indicator comprised of the sum (or

average) of two or more items" (Little et al., 2002:152). Contrary to De Bruin (2004), this method provided inferior results with fit indexes below the acceptable rules of thumb. Therefore, I am confident that the proposed model is indeed the best model to represent the collected data. Results from the models provide support for Hypothesis (H1a) that there is a positive relationship between the family related succession strategy to pass on the family business to the next generation and the intention to engage in environmentally sustainable farming practices. In addition, results also support Hypothesis (H1b) that there is a positive relationship between intentions to engage in environmentally sustainable farming practices and the actual enactment of those practices. The discussion section will consider the implications of these results.

5.4.3. Controlling for Farm Age, Farm Type, and Farm Size

Once I had established that the proposed model provided a good fit, I also controlled for farm age, farm type, and farm size. Table 5.8 provides a summary of the analysis results. Farm age and farm type were not significant, but farm size, in the middle category of farms (1,200-2,499 acres), was significant when considering succession strategy.

5.4.4. Testing for Moderation

I proposed in Hypothesis 2 that the relationship between the succession strategy to pass on the family business to the next generation and environmentally sustainable behaviour is moderated by the firm's resource munificence (i.e. the greater the degree of munificence, the greater the degree of environmentally sustainable behaviour). Using the financial performance information submitted by respondents, I determined that the debt-to-equity ratio would be the closest proxy to the measure of a farm's "cushion of spare resources, such as time, capital, facilities, and human resources" and the extent to which resources are available and usable within a farm, and the extent of any additional potential resources (Wu, 2008). This measure of

resource munificence is an indication that financial resources are committed and therefore not available to address aspects of innovation (Latham & Braun, 2009) or environmental concern in the present study. Analysis indicated that the moderation effects were not significant. Model results show the following *p*-values of EB on Strat – 0.053, EB on Munif – 0.240, and EB on Munif*Strat – 0.231. Hypothesis 2 is not supported. Table 5.5 provides the variable correlations.

I proposed in Hypothesis 3 that the relationship between the succession strategy to pass on the family business to the next generation and environmentally sustainable behaviour is moderated by the affinity between the generations (i.e., the greater the degree of affinity, the greater the degree of environmentally sustainable behaviour). The responses related to relational affinity were measured using CFA to test for convergent and discriminant validity. The four statements from the questionnaire noted above in 5.3.3. (Q23[2, 3, 7, 8]) provided a good measure of the proposed latent variable labeled as Affinity (Affin) (see Table 5.5 and Figure 5.5).

Using the responses to determine the level of affinity between the generations, I tested to see whether affinity moderated the relationship between succession strategy and environmentally sustainable behaviour. Analysis indicated that the moderation effects were not significant. Model results show the following *p*-values of EB on Strat-0.073, EB on Affin-0.612, and EB on Affin*Strat-0.313. Hypothesis 3 is not supported.

Table 5.1 – Descriptive Statistics of Survey Respondents

Respondent	Mean	Range	# of Respondents by Category	Population – 2011 Census
Respondent Age (years)	53	20 – 81		53
Farm Age (years)	71.9	3 – 143		-
Farm Size (acres)	2,551.7	0 – 41,000		1,135 acres
Residents/Farm	2.86*	0 – 9		3.3**
Gender			193 – Male 23 – Female	-
Farm Type			109 – Oilseed/Grain (51.4%) 3 – Veg./Melon (1.4%) 1 – Greenhouse/Nursery (0.5%) 2 – Other Crop (0.9%) 42 – Cattle/Dairy (19.8%) 3 – Hog/Pig (1.4%) 5 – Sheep/Goat (2.4%) 1 – Other Animal (0.5%) 46 – Mixed (21.7%)	Oilseed/Grain (41.7%) Veg./Melon (1.2%) Greenhouse/Nursery (1.6%) Other Crop (13.1%) Cattle/Dairy (28.3%) Hog/Pig (2.0%) Sheep/Goat (1.2%) Other Animal (8.7%) Poultry/Egg (1.6%) Fruit/Tree Nut (0.6%)
Ownership			54 – Sole Proprietorship (25.1%) 40 – Partnership - no agreement (18.6%) 21 – Partnership - with agreement (9.8%) 99 – Family Corp. (46.1%) 1 – Non-family Corp. (0.4%)	Individual/Family Farms (76.4%) Family Corp. (21%) Non-family Corp. (2.6%)
Generation of Family			42 –1st (19.6%) 48 – 2nd (22.4%) 82 – 3rd (38.3%) 38 – 4th (17.8%) 4 – 5th (1.9%)	-

* - Respondents indicated how many family members aged 18 or older resided on the family farm/property as of Dec. 31, 2011.
** - 2011 Census (calculated from total farm population / # of farms).

Table 5.2 – Farm Size Category * Farm Type Category Crosstabulation

		Farm Type Category			Total
		1	2	3	
Farm Size Category	1	16	21	31	68
	2	48	9	14	71
	3	45	10	15	70
Total		109	40	60	209

(Farm Size Categories: 1 – 0-1,199 acres; 2 – 1,200-2,499 acres; 3 – 2,500+ acres)
(Farm Type Categories: 1 – Oilseed/grain producers ; 2 – Cattle/dairy producers; 3 – Other/Mixed farm operations)

Table 5.3 – Descriptive Statistics from Succession Intention & Action Survey Questions

Survey Question	Mean	S.D.
4-point scale (1-Not at all – 4-A lot)		
(Q19) Thought About Passing Farm to Children	2.37	0.99
5-point scale (1-Strongly Disagree – 5-Strongly Agree)		
(Q21[1]) Transfer-Important to Parents	3.27	1.15
(Q21[2]) Transfer-Importance to Self	3.95	0.98
(Q21[3]) Transfer-Importance to Children	3.66	1.02
(Q21[4]) Transfer-Sell Within Family	3.75	1.07
(Q21[5]) Transfer-Sell Outside Family (reverse coded)	3.99	1.04
(Q21[6]) Transfer-Overwhelmed (reverse coded)	3.21	1.14
(Q22[1]) Transfer-Identified Successor	3.26	1.19
(Q22[2]) Transfer-Successor Skills & Abilities	3.54	1.00
(Q22[3]) Transfer-Training	3.41	1.10
(Q22[4]) Transfer-Familiar with Employees	3.46	1.12
(Q22[5]) Transfer-Possesses Skills	3.26	1.09

Table 5.4 – Descriptive Statistics from Environmentally Sustainable Behaviour Survey Questions

Survey Question	Mean	S.D.
5-point scale (1-Strongly Disagree – 2-Strongly Agree)		
(Q25[1]) ECB-Compliance	3.99	0.67
(Q25[2]) ECB-Reports	3.10	0.65
(Q25[3]) ECB-Information	3.84	0.73
(Q25[4]) ECB-Completing Regulations (reverse coded)	3.23	0.93
(Q25[5]) OCB-Regulations Accomplish Little (reverse coded)	2.76	1.04
(Q25[6]) ECB-Association Meetings	3.70	0.97
(Q25[7]) ECB-Meeting Important	4.01	0.78
(Q25[8]) ECB-Announcements	3.96	0.74
(Q25[9]) ECB-Solve Problems	3.80	0.76
(Q25[10]) ECB-Affect Others	4.25	0.68
(Q25[11]) ECB-Help Others	3.53	0.75
(Q25[12]) ECB-Helping Hand	4.28	0.60
(Q25[13]) ECB-More than Required	3.62	0.82
(Q25[14]) ECB-Overwhelmed (reverse coded)	3.02	1.00
5-point scale (2-Never – 6-Very Often)		
(Q26[1]) Minimize Bare Soil	4.99	1.15
(Q26[2]) Minimize Fertilizer	4.26	1.24
(Q26[3]) Test Fertilizer Concentration	4.89	1.07
(Q26[4]) Recommended Manure Storage	5.33	0.89
(Q26[5]) Non-Chemical Pest Controls	3.65	1.17
(Q27[1]) Minimize Water Erosion	4.94	0.97
(Q27[2]) Reduce Wind Erosion	5.05	1.12
(Q27[3]) Increase Crop Residues	5.21	0.82
(Q27[4]) Reduce Soil Salinization	4.56	1.28
(Q28[1]) Monitor Water Contamination	3.36	1.37
(Q28[2]) Monitor Phosphorus Contribution Manure	3.52	1.48
(Q28[3]) Monitor Phosphorus Contribution Fertilizer	3.26	1.41
(Q28[4]) Monitor Emissions	2.57	0.97
(Q28[5]) Reduce Residual Nitrogen	4.06	1.31
(Q28[6]) Reduce Energy Inputs	3.97	1.27

Figure 5.1 – Plot of Survey Responses Based on Postal Codes
(Each marker on the map indicates one or more survey responses)

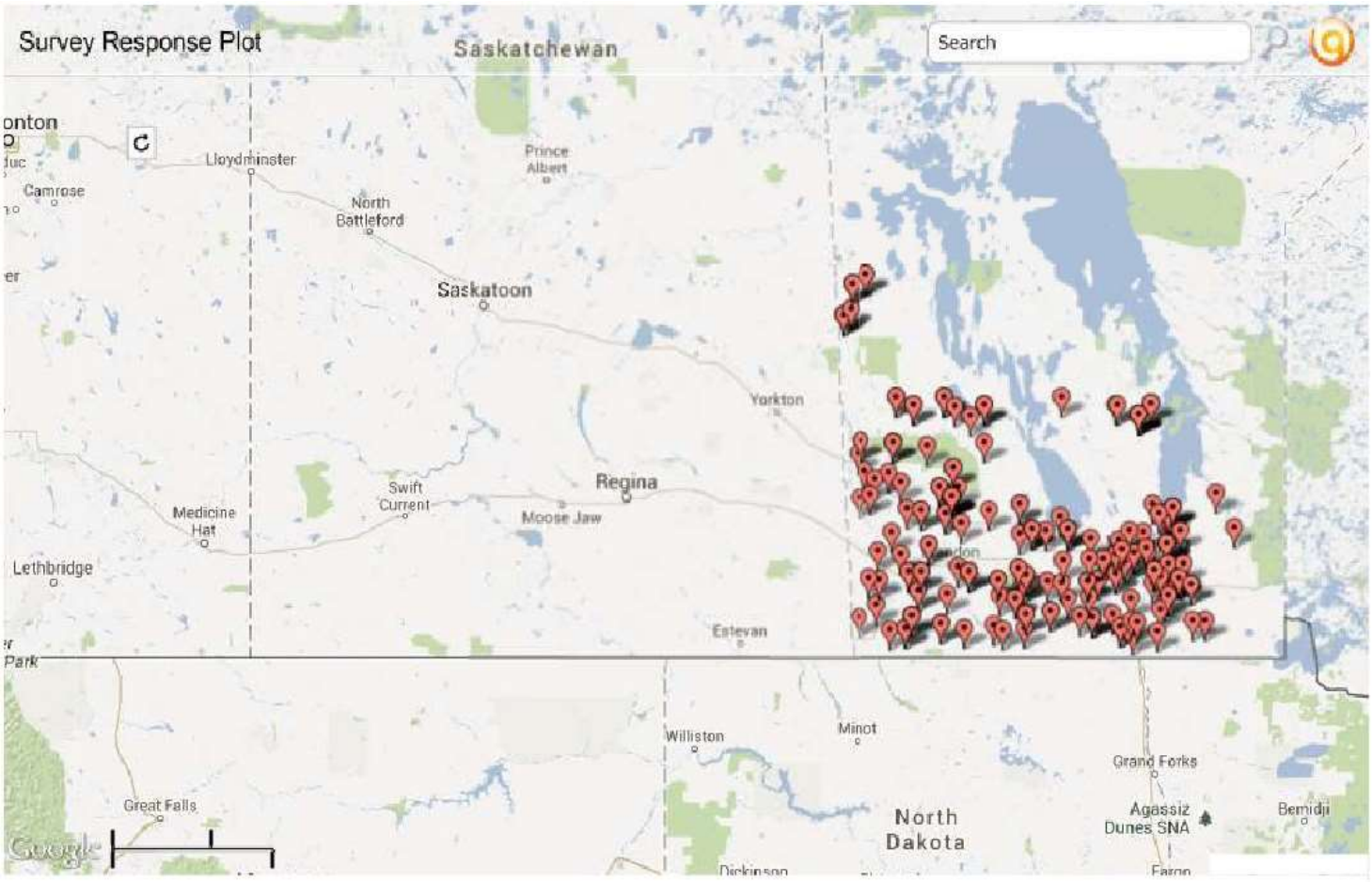


Table 5.5 – Proposed Model Basic Statistics and Pearson Correlations Matrix (*N=182-213*)

Label	Variable Description	Mean	S.D.	FA	FSA	FT	Affin	DTE	SI	SA	ECB	ESFP
FA	**Farm Age**	71.91	34.07									
FSA	**Farm Size in Acres**	2,563.77	3,677.49	.06								
FT	**Farm Type**	---[#]	---[#]	-.16*	-.16*							
Affin	**Intergenerational Behaviour – Affinity**	5.36	1.00	.02	-.00	.06	.78[!]					
DTE	**Debt to Equity Ratio – Munificence**	.13	.15	-.13	-.02	.06	.00					
SI	**Succession Strategy – Intention**	3.83	.87	.15*	.14*	.04	.55**	-.14	.85[!]			
SA	**Succession Strategy – Action**	3.41	.93	.04	.08	.09	.54**	-.08	.57**	.91[!]		
ECB	**Environmental Citizenship Behaviour**	3.67	.52	.07	.04	.07	.24**	.04	.07	.16*	.76[!]	
ESFP	**Environmentally Sustainable Farming Practices**	3.31	1.26	.00	-.01	.14	.16*	.06	.24**	.24**	.34**	.87[!]

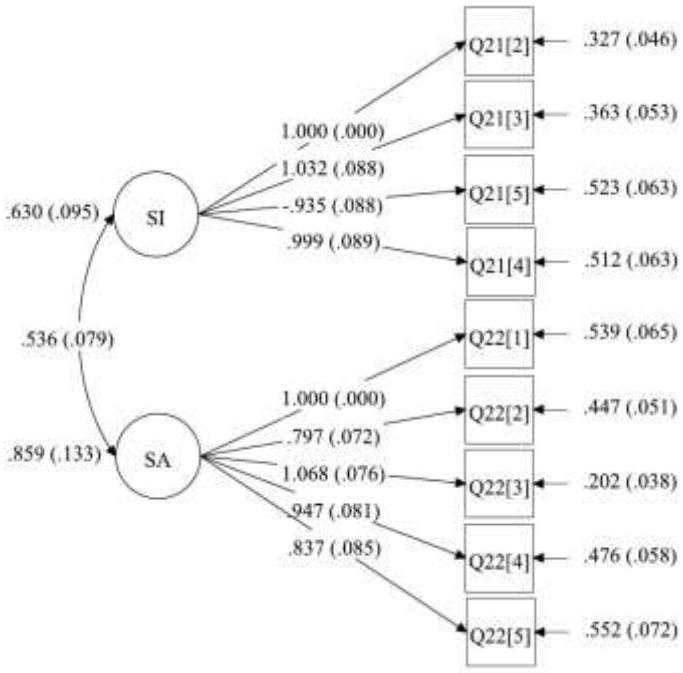
****. Correlation is significant at the 0.01 level (2-tailed).**
***. Correlation is significant at the 0.05 level (2-tailed).**
[!]Coefficient alphas (reliability) are listed in the diagonal.
[#]FT is a categorical variable; therefore Mean & S.D. are not relevant

Table 5.6 – Validity Check of Succession Intention and Action (Basic Statistics and Pearson Correlations Matrix) (*N=195-209*)

Label	Variable Description	Mean	S.D.	SI	SA	Q19	Q30[3]
SI	**Succession Strategy – Intention**	3.83	.87	.85[!]			
SA	**Succession Strategy – Action**	3.41	.93	.57**	.91[!]		
Q19	**How much have you thought about passing your farm on to your children during the past month?**	2.37	.99	.41**	.35**		
Q30[3]	**This farm is definitely not for sale**	4.18	1.08	.53**	.35**	.18*	

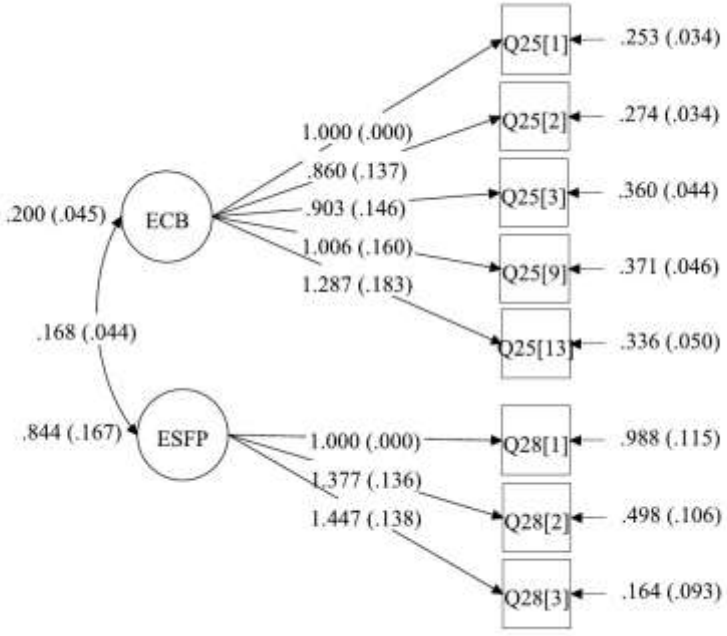
****. Correlation is significant at the 0.01 level (2-tailed).**
***. Correlation is significant at the 0.05 level (2-tailed).**
[!]Coefficient alphas (reliability) are listed in the diagonal.

Figure 5.2 – Family Farm Succession—Observed with Latent Variables Path Diagram



- SI – Succession Intent; SA – Succession Action
- Indicator label (i.e., "Q21[2]" refers to the question number in the survey document found in Appendix 4

Figure 5.3 – Family Farm Environmental Behaviour—Observed and Latent Variables Path Diagram



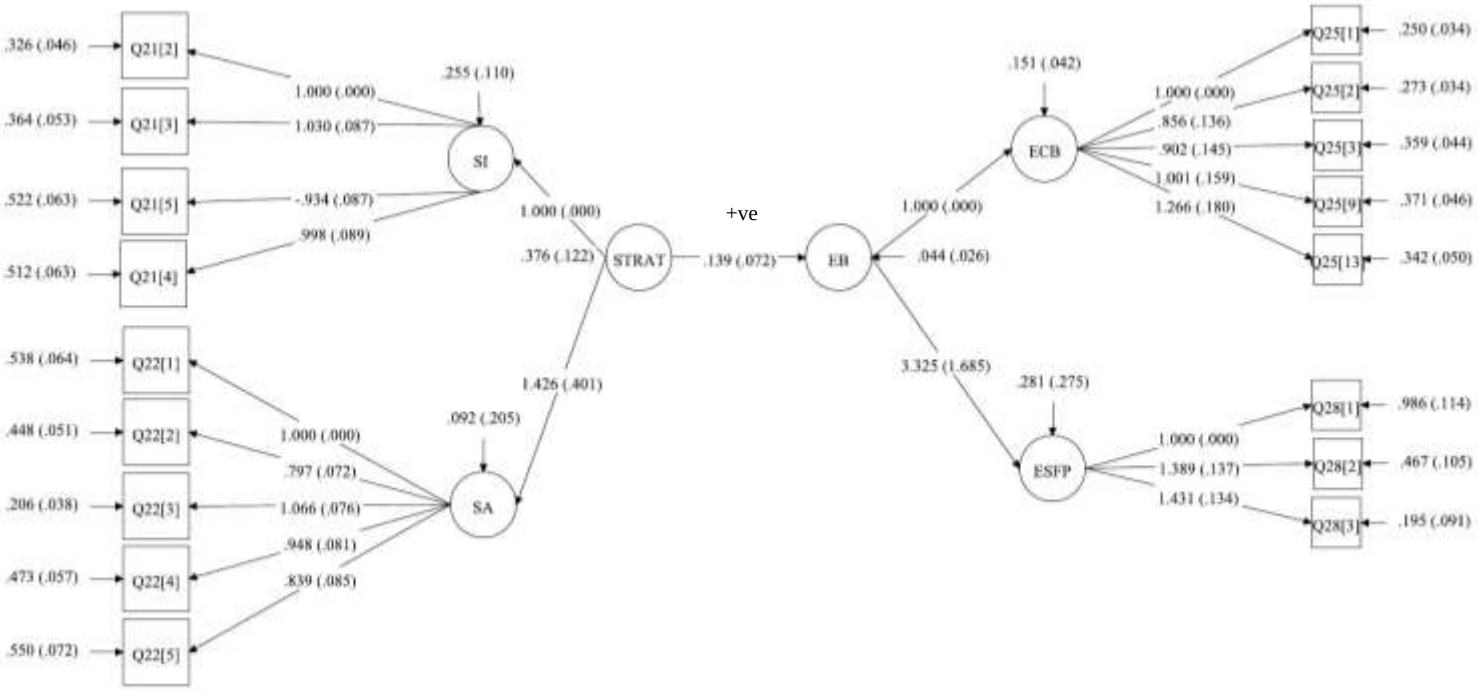
- ECB – Environmental Citizenship Behaviour;
  ESFP – Environmentally Sustainable Farming Practices
- Indicator label (i.e., "Q25[1]" refers to the question number in the survey document found in Appendix 4

Table 5.7 – Model Statistics

Proposed Model	Chi-Square	*df*	*p*-value	Main Effect Standardized *p*-value	CFI	TLI	RMSEA	SRMR
EB on Strat	191.543	114	0.0000	0.001	0.95	0.94	0.057	0.052

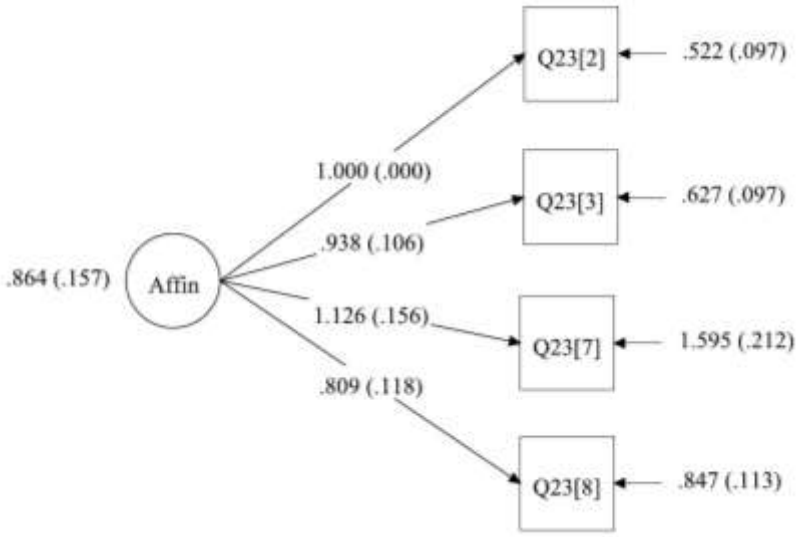
- EB – Environmental Behaviour; Strat – Succession Strategy; CFI – Comparative Fit Index; TLI – Tucker-Lewis Index; RMSEA – Root Mean Square Error of Approximation; SRMR – Standardized Root mean Square Residual

Figure 5.4 – Succession Strategy—Environmentally Sustainable Behaviour Main Effect Path Model



- STRAT – Succession Strategy; SI – Succession Intent; SA – Succession Action; EB – Environmental Behaviour; ECB – Environmental Citizenship Behaviour; ESFP – Environmentally Sustainable Farming Practices
- Indicator label (i.e., "Q21[2]" refers to the question number in the survey document found in Appendix 4

Figure 5.5 – Intergenerational Behaviour-Affinity Observed and Latent Variables Path Diagram



- Affin – Affinity
- Indicator label (i.e., "Q23[2]" refers to the question number in the survey document found in Appendix 4

Table 5.8 – Proposed Model with Control Variables

Control Variable	Category Variable	Main Effect Standardized *p*-value	EB on Category Variable Standardized *p*-value	Strat on Category Variable Standardized *p*-value	CFI	TLI	RMSEA	SRMR
Farm Age	FA1	0.000	0.378	0.590	0.948	0.939	0.051	0.055
	FA2		0.903	0.776				
Farm Type	FT1	0.047	0.237	0.275	0.948	0.939	0.051	0.051
	FT2		0.399	0.497				
Farm Size	FS1	0.011	0.076	0.190	0.957	0.949	0.046	0.051
	FS2		0.583	0.018				

- CFI – Comparative Fit Index; TLI – Tucker-Lewis Index;
  RMSEA – Root Mean Square Error of Approximation;
  SRMR – Standardized Root mean Square Residual
- FA1 – Farm Age Dummy Variable 1; FA2 – Farm Age Dummy Variable 2;
  FS1 – Farm Size in Acres Dummy Variable 1; FS2 – Farm Size in Acres Dummy Variable 2;
  FT1 – Farm Type Dummy Variable 1; FT2 – Farm Type Dummy Variable 2

6. Discussion and Conclusions

6.1. Introduction

This research combines insights from family business succession strategy, environmentally sustainable management practices and the nature of intergenerational behaviour to address the issue of succession strategy within family business and its possible relationship with environmentally sustainable management practices. Review and integration of those literatures suggested a number of testable hypotheses, which I applied to the Manitoba family farm community. The theoretical framework that linked these areas of research was developed into specific hypotheses in Chapter 3. The research methodology for testing the hypotheses was outlined in Chapter 4. Chapter 5 reported the analysis performed on the data collected using both exploratory factor analysis and structural equation modeling.

Results from the tests were mixed. There was significant support for hypothesis (H1a), that there is a positive relationship between the family related succession strategy to pass on the family business to the next generation and the intention to engage in environmentally sustainable farming practices. In addition, results also support hypothesis (H1b) that there is a positive relationship between intentions to engage in environmentally sustainable farming practices and the actual enactment of those practices. Further, moderator hypotheses (H2 & H3) for munificence and affinity were rejected. However, further analysis with control variables for type, size and age of farm indicated that size was a significant factor when it pertains to succession strategy for a specific size category of farm operations.

Part of the data collection process provided respondents the opportunity to contribute responses to open-ended questions. These responses provide somewhat of a validity check on the specific measurement questions, as well as rich and unique summarization of the issues that were

most pertinent to respondents when it came to the motivation for being a farmer, issues of farm succession, and concerns regarding environmental regulations. Some select comments have been used in this summary to provide practical illustration to the reader of the attitudes and behaviours being measured through this research.

6.2. Research Questions Revisited

In this dissertation research I set out to focus on the primary question of succession intention and action in the family-intensive business context and its connection to issues of environmental sustainability. More specifically, I attempted to address the following three research questions.

First, do owners of family enterprises manage differently when they intend to pass the enterprise over to their family? Based on the results from my survey in the Manitoba Family Farm community, the first stage of analysis provides results that show significant correlation between succession intention and succession action, while yet being significantly unique as separate factors. The second stage of analysis also confirmed the old adage the "actions speak louder than words," as the model estimate is substantially stronger for succession action than it is for succession intention (1.426 vs. 1.000). This is supportive of the idea that intention is only fully realized through action (Drucker, 1974, 2008) and this is the reality that family farms are facing. As the survey respondents have indicated, not only do they intend to pass the farm on to the next generation, they are actively engaged in (1) identifying the successor(s), (2) training the successor(s) for future leadership, and (3) ensuring the successor(s) have the required skills for running the farm.

One other dominant theme that was not captured through the specific questions measuring succession activities, but came through the open-ended questions was the level of

anxiety among the current generation regarding the desire to be fair to the generations that follow and how to manage where there is not an obvious heir to take over the farm. This feeling is captured by one of the respondent's comments in response to the question, "To the extent you have thought about it (passing your farm on to your children), what is the single most important factor that concerns you?" *"To make the farm viable for the next generation and to be fair to all of our 3 children in passing on our material assets."* Other comments also provided a sense of lingering uncertainty even though plans for succession were in place: *"Farm succession is the elephant in the room here. There is a process in place, but it needs tweaking. I am still farming, but the time period for continuation is somewhat restricted by my age. My children are not going to farm. One of my grandchildren, probably not, but should I be leaving that option open? And how best do I do that? My family has only farmed for 3 generations, on more than one side of the family. I know it is an option for the future."* Finally, one other respondent indicated that *"'time' will be an important consideration. I know that I could easily sell the farm, but I am uncertain if that is the path I prefer to follow. In other words, I am currently in a state of indecision. The state of my health will also be a determining factor, in the final analysis."* Survey responses give a clear indication that owners of family enterprises manage differently when they intend to pass the enterprise over to their family.

Second, how do the intergenerational constructs of intergenerational beneficence and intergenerational discounting function within the family business context when the intention is to hand the business over to future generations? The initial dissertation proposal considered a follow-up study that would probe deeper into intergenerational behaviour issues in the family farm context where multiple generations of farmers from the same family could be interviewed and responses considered regarding aspects of beneficence and discounting. However, in this

study, only aspects of relational affinity were measured. While I am confident that these measures indicated a fairly strong sense of affinity (means ranging from 5.08 to 5.87 on a 7-point scale) and significant indication of a latent variable, affinity, did not significantly moderate the relationship between succession strategy and environmentally sustainable behaviour.

In reviewing comments respondents made regarding the next or future generation (Q20), they were most often in reference to concern about one or more of the following: (1) the farm's viability to support the next generation; (2) the next generation having the ability to be successful; (3) not leaving a financial burden for the next generation; (4) value being preserved for the future generation; and (5) that the next generation of relatives could work together and have stable marriages. Two separate respondents aptly captured these concerns in describing the single most important factor that concerned them about passing the farm on to their children. They were stated as (1) *"how to transfer the farm without jeopardizing our retirement, jeopardizing the next generation's viability and being fair to non-farming children"* and (2) *"the division of assets that still allow those interested in farming to have enough capital to operate without too much hardship."*

These matters of concern are quite closely connected to aspects of succession intention. Moreover, as observed in Table 5.3, while the affinity factors are all highly correlated with the succession intention and action factors, factor analysis differentiates these as separate components. The affinity factors also show significant correlation with the measures of both environmental citizenship behaviour and environmentally sustainable farming practices. I suggest that affinity may be too similar to both succession intention and action, and environmentally sustainable behaviour for it to significantly moderate the relationship between these main effect factors.

Third, how is family business-related intergenerational intentionality associated with the likelihood of enacting environmentally sustainable management practices? This question is at the heart of the research study and the primary relationship that I wanted to measure. Based on the analysis, results indicate that there is a positive relationship between these two factors. Therefore, in the Manitoba family farm context, the further along a succession plan is being acted upon, the greater the likelihood the farm family will engage in environmentally sustainable farming practices. These findings reinforce the theory discussed above from Miller & Le Bretton-Miller (2007) whereby the family enterprise (1) favours a substantive mission beyond profitability, (2) embraces strong values in selecting and training people, (3) prefers long-term stakeholder relationships, and (4) uses courageous governance that invests for the long run.

In addition to the proposed model indicating significant support of hypotheses H1a and H1b, further analysis using SEM of what respondents considered to be important goals in their farming operations provides further support for the significant positive relationship between succession strategy and environmentally sustainable behaviour. As a measure of farming activity goals, respondents were asked to indicate the degree of importance for each of the following items on a five-point Likert-type scale (1-"Not Important" to 5-"Very Important"): (1) to build up farm, wealth and family assets; (2) to earn a high personal income; (3) to improve resource/land conditions; and (4) to be a good steward of the land. Using these observed variables as indicators of the latent variable "Importance," I tested the relationship between "Importance" and Environmental Behaviour (EB) and Succession Strategy (Strat), respectively. Table 6.1 provides a summary of the analysis results, showing a significant model fit for the factors pertaining to (1) improving resource/land conditions and (2) being a good steward of the

land. A correlation table with means and standard deviations for these relevant factors and those from the proposed model is shown in Table 6.2.

In support of this connection between family farm succession strategy, environmentally sustainable behaviour and the importance of improving resource/land conditions and being a good steward of the land, one respondent commented quite strongly on how to differentiate between true farming and industrial food production: *"Farming is a biological process, not an industrial process. True farmers produce food within the parameters established by natural processes. They don't employ destructive technologies such as genetically-engineered crops or substances, rely on herbicides and pesticides and harm their neighbours and structurally, systemically and actually abuse their animals. Farmers on the other hand use technologies that enhance their ability to work better with nature and with animals. True farmers are integrated into the life of the land and that of their families. True farmers understand the fallacy of the economies of scale and that profitability is more easily attained by reducing size and getting more return for less volume."* One other respondent also provided comments that nicely summarize the challenge in balancing family farm succession, economic success and, environmental concern. This respondent noted that *"we have sacrificed our own level of income to allow for our children to get started in farming and our parents have also helped contribute to our children in helping them to get started and to go forward in the best way that they can see for their own families using their own agency in the way that they see fit. Sometimes this works and sometimes this might not; but we have been able to witness successes and failures within our family and allowed the kids to go through both of these things and to be responsible for what happens next in their own lives. We do not believe that we have all the answers to how our kids should farm, but we do believe that some of the answers lie in experience and that is offered*

when it is asked for." Navigating through these important challenges is a process where family firms have the benefit of the next generation active in leadership and direct management to maintain family firm survival and character (Barach & Ganitsky, 1995), but also the insight and experience of the previous generation.

6.3. Theoretical Implications

This study was intended to make a contribution to the formal theoretical issues in (1) family business succession strategy, (2) intergenerational behaviour, and (3) environmental sustainability. First, in reviewing the existing research, I identified the opportunity for drawing a stronger connection between the intention to have future generations of family assume ownership and the strategic business decisions that guide business performance behaviour. The confirmation of the main effect hypotheses in the proposed model provides support for this relationship between non-economic goals and strategic management decisions. A significant positive relationship within the family enterprise between succession strategy and environmental sustainability begins to provide evidence to narrow the research gap identified by Debicki et al. (2009) whereby greater attention and long-term enterprise viability is being attributed to the intersection of the economic and non-economic goals of family firms, as well as the process by which these goals are formulated.

Second, Wade-Benzoni's (2002, 2003) development of intergenerational behaviour and the specific dimensions of reciprocity, legacy, and affinity as they pertain to generational relevance to the past, present and future, respectively, could be useful concepts for exploring generational relationships in the family enterprise context. In the current study I introduced the dimension of affinity as a potential moderator. While the moderation effects were not significant in the proposed model, there was significant correlation between affinity and the measures of

both strategy and environmental behaviour. These significant correlations provide a helpful indication that measuring affinity within the family enterprise could be a suitable construct to better understand how family members envision the next generation and possibly consider how current generation, family business decisions potentially influence the future success of the firm.

Third, results from this study also confirmed the theoretical relationship between the adapted version of organizational citizenship behaviour and specific industry, environmentally sustainable behaviours. More importantly, the significant positive connection between succession strategy and environmental behaviour provides further evidence that the long-term planning horizon (Miller & Le Bretton-Miller, 2007) may be a critical factor for family firms to more successfully address issues of environmental sustainability. The dominant dimensions that were reflected in the data measuring environmental citizenship behaviour related to aspects of conscientiousness and therefore provided an indication that behaviour was going beyond mere compliance.

6.4. Practical Implications

In collecting data from family farm respondents I was hoping that this research would provide some useful information that could help the community of family farmers as they face the challenges of operating sustainable farming operations and successfully passing the farm on to the next generation. I believe that my findings help reinforce the importance that needs to be placed on family farm operations. The positive link between succession strategy and environmental sustainability points to the importance of long-term planning horizons. These family enterprises need to commit the necessary resources of time for planning, and finances for transition costs, to ensure the family farm will be successfully taken over by the next generation of family.

Subsequent to this research project being undertaken, the United Nations (UN) declared 2014 to be the International Year of Family Farm (IYFF) (http://tinyurl.com/netczcx; http://tinyurl.com/m43jjp8). In doing so, the UN have stated that the goal of this initiative is "to reposition family farming at the centre of agricultural, environmental and social policies in the national agendas by identifying gaps and opportunities to promote a shift towards a more equal and balanced development." In highlighting the significant contribution and role of the family farm, they also hope to expand discussion at all governing and regulatory levels which will increase awareness and promote understanding of the challenges being faced by family farmers. Moreover, it is expected that an increased profile will also help to eradicate hunger and poverty, provide food security and nutrition, improve livelihoods, manage natural resources, protect the environment, and achieve sustainable development, in particular in rural areas.

The confirmation of a positive relationship between succession strategy and environmentally sustainable behaviour in my research offers some encouraging corollaries for the family farm community and the broader community. First, the research results provide hard data to support the repositioning of family farms at the centre of agricultural, environmental and social policies. Policies that govern larger scale food production can often penalize or curtail the development of smaller family operations whereas acknowledging this positive relationship is conducive for supporting the development of policies that foster sustainable family farming. Therefore, this research has implications for those people in provincial governing roles to consider how regulations and industry incentives pertaining to family farms, food production, and the natural environmental need to be considered for the synergies they can create.

Second, further dialogue and understanding are necessary to address the growing tensions between urban centres of power and rural centres of food production. Awareness of how family

farms and environmental sustainability are closely linked can help to develop policies and regulations that promote family farm development. An improved dialogue, which is necessary to develop a more preferred future in family farms can help provide an increased incentive for the next generation of farmers to positively purse farming as a career.

Finally, with an ever increasing shift of population towards urban centres and the corresponding decline in awareness of what takes place in agricultural food production, my research findings provide further motivation for the family farm community to reach out to the non-agricultural community. The purpose of this dialogue is to increase the awareness and knowledge of how family farm operations significantly contribute towards sustainable development. It is also important to see how these relationships have long-term implications on future generations of both farm operators and food consumers.

6.5. Limitations

In considering the findings of this research there are a number of important limitations which also need mention. These include issues of construct measurement, data reliability, samples selection, and research design. The first issue concerns measurement, most notably of the environmentally sustainable farming practices (ESFP) construct as a scale of the degree of current practices. In collecting data from a broad variety of farming operations, a single homogeneous measure may not be realistic as each sector of the agriculture community potentially deals with different challenges when it comes to the physical environment, as well as different measurement dimensionality. As Diamantopoulos and Winklhofer (2001) illustrate, there are four issues that are critical to successful index construction, (1) content specification, (2) indicator specification, (3) indicator collinearity, and (4) external validity. This approach uses the formative perspective as opposed to the reflective indicators that are used when engaging in

scale development and the establishment of latent variables. My approach in attempting to establish a reflective latent variable may not be the most effective way in which to capture the behaviour in question for the industry as a whole. A second measurement concern relates to my attempt to measure farm munificence. While I used debt-to-equity (DTE) as a simple proxy for munificence, as Dess and Beard (1984) indicate, munificence is most effectively assessed by measuring (1) the rate of sales growth, (2) market growth, and (3) profitability of the industry or return on equity. As my survey was cross-sectional and not longitudinal, better measures of munificence were not obtainable in my research. There was also a significant drop-off in financial information being disclosed by respondents, as they were not obligated to answer any questions that they found uncomfortable. Over 30% of respondents did not complete or left substantial portions blank in the section on farm financial performance. The 2011 year being referenced by respondents was also a growing season where producers faced a significant amount of flooding, which impacted their operations.

A second issue concerns the data's reliability. My data collection design did not allow for incorporating multiple data sources. The assumption was that respondents were the primary decision maker in the farm operation. This limitation was due in large part to the nature of the subject studied and similar to other research being conducted in the family business context. While there may be a number of family members involved in the enterprise, only one individual is making representation of how the operation as a whole is performing. As I am also interested in intergenerational aspects of family business structures, follow-up or future research on this particular topic could perhaps circumvent this limitation in one of two ways; (1) either by identifying a sub-sample of firms able and willing to supply multiple respondents, and/or (2)

revisiting respondents at a later point in time to assess the reliability of earlier responses. I will expand on this constraint in the section addressing possible future research.

A third issue concerns voluntary response bias or nonresponse bias. Although respondents were not completely self-selected, the concern may be raised that the sample responses collected tend to over-represent individuals who have strong opinions. Nonresponse bias is the bias that results when respondents differ in meaningful ways from non-respondents. To address this issue, I attempted to insure the sample collected was representative of the total population by both industry sector (demographic factors such as respondent age and farm size) and geographic representation. In addition, I approached producers through multiple agencies to minimize over-representation by any particular segment of the population. According to Baruch and Holtom (2008), because response rates are only one indicator of sample quality, researchers should also conduct and report on non-response bias impact assessments (e.g., archival analysis, resurvey non-respondents, comparison of late respondents to early respondents, interest-level analysis, active non-response analysis via interviews, worst-case resistance, benchmarking analysis, and replication). In addition to the steps I used, some of these suggested assessments could be considered for future data collection from this population.

Two final issues concern the research design I used in this study. First, while the issue of succession strategy and intergenerational behaviours would best be studied longitudinally, particularly examining the relationship of succession from both sides of the generational relationship and collecting strategy and performance information from the same firm at multiple points in time, practical constraints dictated using a cross-section design where individual firms were studied at only one moment in time. While I attempted to ensure I was capturing the

behaviour indicative of succession strategy and intergenerational challenges, interpretation of this study's result must be qualified by this design caveat.

A second design issue concerns the generalizability of the research findings to other family firm contexts. While the context of family farms was particularly well suited for the study of the succession strategy and environmentally sustainable farming practices, this phenomenon is by no means confined to the family farm community. Other industry sectors also exhibit family firms and issues of environmental sustainability. While the positive relationship between succession strategy and environmental behaviour is supported by this study, the thesis of different strategic competencies being necessary to encourage environmental sustainability in different family business sectors remains a distinct possibility. While my primary hypothesis has been supported in the family farm context, the same cannot be succinctly stated without further research within those particular settings.

6.6. Future Research

The initial conception of this research encompassed multiple studies being completed. These additional studies would include more intensive interviews whereby intergenerational perspectives relating to issues of family farm succession could be examined, as well as differentiating among farm sectors because environmental issues varied between subdivisions. After further consideration and input from my advising committee, it was determined that a single study would be sufficient for the purpose of this initial thesis. The more comprehensive research agenda was seen to describe more of possible career of research.

A natural next study would consist of a separate questionnaire focusing on the succession process and intergenerational behaviours. In addition I would use several in-depth interviews with multiple generations of family farmers to explore qualitative issues around succession

intention, environmental sustainability pressures, and workplace stress. Multiple intergenerational respondents would allow for better measures of intergenerational beneficence and discounting, aspirational legacy, as well as proximity and affinity between generations. One factor that appeared to be important in the initial interviews concerned the role of stress in decision making. In the interest of parsimony and developing a simpler model, stress was removed from the study. Subsequent studies could revisit this aspect and consider how both eustress and distress may contribute to the relationship between succession strategy and environmental behaviours.

Respondents in the second study would be recruited from the first study, but would also then include additional family members. There were 29 respondents in the first study that indicated they could be contacted to participate with more family members in subsequent family farm research. My intention would be to secure at least two participants per farm for Study Two to facilitate the use of the paired difference tests in the analysis of results from different generational respondents of each family farm. Use of some of the same questions used in the first study would provide a measure of construct validity and reliability. The willingness of respondents in Study One to participate again in Study Two would also determine whether a narrow focus of farm types would be investigated or whether it would cross all farm sectors.

The use of more specific and relevant scenarios that are particular to individual segments of the industry (i.e., use of gestation crates in hog operations, spreading of manure on arable land) could then be used to examine the relationship between family succession strategy and environmentally sustainable farming practices.

Finally, future research could also consider whether there is any significant differences between family farms and non-family farms in how environmental sustainability is addressed.

This may provide further justification regarding the value of the family farm to the social fabric of rural communities.

Table 6.1 – Proposed Model with Importance Factors

"Importance" Model	Question #	"EB" on "Importance" Standardized *p*-value	"Strat" on "Importance" Standardized *p*-value	CFI	TLI	RMSEA	SRMR
Asset/Income	Q18[1]	No convergence					
	Q18[2]						
Asset/Income	Q18[1]	No convergence					
	Q18[2]						
Improve Resources/ Stewardship	Q18[3]	0.005	--	1.00	1.00	0.000	0.038
	Q18[4]						
Improve Resources/ Stewardship	Q18[3]	--	0.000	0.964	0.952	0.069	0.046
	Q18[4]						

- Strat – Succession Strategy; EB – Environmental Behaviour

Table 6.2 – Farming Importance & Proposed Model Factors Basic Statistics and Pearson Correlations Matrix (*N=186-214*)

Label	Variable Description	Mean	S.D.	SI	SA	ECB	ESFP	C87	C88	C89	C91
SI	**Succession Strategy – Intent**	3.83	.87	.85							
SA	**Succession Strategy – Action**	3.41	.93	.57**	.91						
ECB	**Environmental Citizenship Behaviour**	3.67	1.26	.07	.16*	.76					
ESFP	**Environmentally Sustainable Farming Practices**	3.31	.49	.24**	.24**	.34**	.87				
C87	**Build Up Assets**	4.08	.91	.15*	.10	-.06	.05				
C88	**High Personal Income**	3.39	.96	-.01	-.03	-.05	-.03	.44**			
C89	**Improve Resource/Land Condition**	4.21	.76	.26**	.20**	.18*	.13	.28**	.17*		
C91	**Good Steward-Natural Environ.**	4.38	.71	.24**	.14*	.12	.11	.19**	.12	.70**	

****. Correlation is significant at the 0.01 level (2-tailed).**

***. Correlation is significant at the 0.05 level (2-tailed).**

Coefficient alphas (reliability) are listed in the diagonal.

REFERENCES

Aldrich, H.E. 1979. *Organizations and environments*. Englewood Cliffs, NJ: Prentice-Hall.

Ajzen, I. 1991. The theory of planned behavior. *Organizational Behavior and Human Decision Processes*, 50:2, 179-211.

Allport, G.W. 1954. *The nature of prejudice.* Reading, MA.: Addison-Wesley.

Aldrich, H.E. & Cliff, J.E. 2003. The pervasive effects of family on entrepreneurship: Toward a family embeddedness perspective. *Journal of Business Venturing*, 18, 573-596.

Astrachan, J.H. & Pieper, T. 2010. Introduction to vol. 1. *Journal of Family Business Strategy*, 1, 1-5.

Astrachan, J.H., Klein, S.B. & Smyrnios, K.X. 2002. The F-PEC scale of family influence: A proposal for solving the *family business* definition problem. *Family Business Review*, 15:1, 45-58.

Baker, K.G. & Wiseman, K.K. 1998. Leadership, legacy, and emotional process in family business. *Family Business Review*, 11:3, 207-213.

Baker, T.L., Hunt, T.G. & Andrew, C.A. 2006. Promoting ethical behavior and organizational citizenship behaviors: The influence of corporate ethical values. *Journal of Business Research*, 59, 849-857.

Barach, J.A. & Ganitsky, J.B. 1995. Successful succession in family business. *Family Business Review*, 8:2, 131-155.

Bärlund, K. 2004-2005. Sustainable development - concept and action. United Nations Economic Commission for Europe. Retrieved from http://www.unece.org/oes/nutshell/2004-2005/focus_sustainable_development.html.

Baruch, Y., & Holtom, B.C. 2008. Survey response rate levels and trends in organizational research. *Human Relations*, 61:8, 1139-1160.

Basu, K. & Palazzo, G. 2008. Corporate social responsibility: A process model of sensemaking. *The Academy of Management Review*, 33:1, 122-136.

Bateman, T.S. & Organ, D.W. 1983. Job satisfaction and the good soldier: The relationship between affect and employee "citizenship." *Academy of Management Journal*, 26, 587-595.

Bentler, P.M. 1989. Comparative fit indexes in structural models. *Psychological Bulletin*, 107: 238-246.

Berrone, P., Cruz, C., Gomez-Mejia, L.R. & Larraza-Kintana, M. 2010. Socioemotional wealth and corporate responses to institutional pressures: Do family-controlled firms pollute less? *Administrative Science Quarterly*, 55:1, 82-113.

Bertrand, M. & Schoar, A. 2006. The role family in family firms. *The Journal of Economic Perspectives*, 20:2, 73-96.

Bird, B., Welsch, H., Astrachan, J.H. & Pistrui, D. 2002. Family business research: The evolution of an academic field. *Family Business Review*, 15:4, 337–350.

Brewer, M.B. 1993. Social identity, distinctiveness, and in-group homogeneity. *Social Cognition*, 11:1, 150-164.

Brittain, J.W. & Freeman, J. 1980. Organization proliferation and density dependent selection. In J.R. Kimberly & R. Miles (eds.), *The organizational life cycle*, (pp.291-338). San Francisco: Jossey-Bass.

Brockhaus, R.H. 2004. Family business succession: Suggestions for future research. *Family Business Review*, 17:2, 165-177.

Bromley, D.W. 2007. Environmental regulations and the problem of sustainability: Moving beyond "market failure", *Ecological economics*, 63:4, 676-683.

Brookfield, H. & Parsons, H. 2007. *Family farms: survival and prospect: A world-wide analysis*. New York: Routledge.

Brookfield, H. 2008. Family farms are still around: Time to invert the old agrarian question. *Geography Compass*, 2:1, 108-126.

Brown, R. 1965. *Social psychology*, New York: Free Press.

Brun de Pontet, S., Wrosch, C. & Gagne, M. 2007. An exploration of the generational differences in levels of control held among family businesses approaching succession. *Family Business Review*, 20:4, 337-354.

Brundtland Commission. 1987. Report of the World Commission on Environment and Development: Our Common Future. United Nations

Burton, B.K. & Goldsby, M. 2009. Corporate social responsibility orientation, goals and behavior: A study of small business owners. *Business & Society*, 48:1, 88-104.

Cabrera-Suárez, K., De Saá-Pérez, P. & García-Almeida, D. 2001. The succession process from a resource- and knowledge-based view of the family firm. *Family Business Review*, 14:1, 37-47.

Cadieux, L. 2007. Succession in small and medium-sized family businesses: Toward a typology of predecessor roles during and after instatement of the successor. *Family Business Review*, 20:2, 95-109.

Canada's Games. 2010. http://www.canada2010.gc.ca/obj/dura-sust/040401-eng.cfm

CASA (Canadian Agriculture Safety Association). 2005a. *Difficult times: Stress on the farm.* Retrieved from http://www.cchsa-ccssma.usask.ca/ahsn/pubs/Toolbook_national_c2.pdf

CASA (Canadian Agriculture Safety Association). 2005b. *National stress and mental health survey of Canadian farmers.* Retrieved from http://www.casa-acsa.ca/sites/default/files/en/media/releases/NationalStressSurveyResultsPublic2005.pdf

Carland, J.W., Hoy, F., Boultan, W.R. & Carland, J.C. 1984. Differentiating entrepreneurs from small business owners: A conceptualization. *Academy of Management Review*, 9:2, 354-359.

Chan, D. 1998. Functional relations among constructs in the same content domain at different levels of analysis: A typology of composition models. *Journal of Applied Psychology*, 83:2, 234-246.

Chittoor, R. & Das, R. 2007. Professionalization of management and succession performance - A vital linkage. *Family Business Review*, 20:1, 65-79.

Chrisman, J.J., Chua, J.H. & Sharma, P. 2005. Trends and directions in the development of a strategic management theory of the family firm. *Entrepreneurship Theory & Practice*, 29:5, 555-575.

Chrisman, J.J., Sharma, P. & Taggar, S. 2007. Family influences on firms: An introduction. *Journal of Business Research*, 60, 1005-1011.

Chrisman, J.J., Chua, J.H., Kellermanns, F.W., Matherne, C.I. & Debicki, B. 2008. Management journals as venues for publication of family business research. *Entrepreneurship Theory & Practice*, 32:5, 927-934.

Chrisman, J.J., Kellermanns, F.W., Chan, K.C. & Liano, K. 2010. Intellectual foundations of current research in family business: An identification and review of 25 influential articles. *Family Business Review*, 23:1, 9-26.

Chua, J.H., Chrisman, J.J. & Sharma, P. 1999. Defining the family business by behavior. *Entrepreneurship Theory & Practice*, 23:4, 19-39.

Cohn, M. 1990. *Passing the torch: Transfer strategies for your family business*. Blue Ridge Summit, PA: Liberty Hall Press.

Craig, J. & Dibrell, C. 2006. The natural environment, innovation, and firm performance: A comparative study. *Family Business Review*, 19:4, 275-288.

Dallos, R. & Sapsford, R. 1997. Patterns of diversity and lived reality. In J. Munice, M. Wetherell, M. Langan, R. Dallos & A. Cochrane (eds.), *Understanding the Family* (pp. 174-212). London: Sage.

Davis, P.S. & Harveston, P.D. 1998. The influence of family on the family business succession process: A multi-generational perspective. *Entrepreneurship Theory & Practice*, 22:3, 31-53.

Davis, J.A. & Tagiuri, R. 1989. The influence of life stage on father-son relationships in family companies. *Family Business Review*, 2:1, 47-74.

Debicki, B.J., Matherne III, C.F., Kellermanns, F.W. & Chrisman, J.J. 2009. Family business research in the new millennium. *Family Business Review*, 22:2, 151-166.

De Bruin, G.P. 2004. Problems with the factor analysis of items: Solutions based on item response theory and item parcelling. *Journal of Industrial Psychology*, 30:4, 16-26.

De Massis, A., Chua, J.H. & Chrisman, J.J. 2008. Factors preventing intra-family succession. *Family Business Review*, 21:2, 183-199.

Déniz, M.C.D. & Suárez, M.K.C. 2005. Corporate social responsibility and family business in Spain. *Journal of Business Ethics*, 56:1, 27-41.

Desjardins, R.L., Janzen, H.H., Rochette, P., McConkey, B., Boehm, M., &Worth, D. 2008. Moving Canadian agricultural landscapes from GHG source to sink. In H. Hengeveld, L. Braithwaite, R., Desjardins, J. Gorjup, & P. Hall (Eds), *Enhancement of greenhouse gas sinks: A Canadian science assessment*. Toronto, ON, Canada: Environment Canada.

Dess, G.G. & Beard, D.W. 1984. Dimensions of organizational task environments. *Administrative Science Quarterly*, 29, 52-73.

de St. Aubin, E., McAdams, D.P. & Kim, T. 2004. *The generative society: Caring for future generations*. Washington, DC: American Psychological Association.

Diamantopoulos, A., & Winklhofer, H.M. 2001. Index construction with formative indicators: An alternative to scale development. *Journal of Marketing Research*, 38:2, 269-277.

Dickson, A. 2010. Interview.

Dillman, D.A. 2007. *Mail and internet surveys: The tailored design method*. Hoboken, NJ: John Wiley & Sons.

Dillman, D.A. 2009. *Internet, mail, and mixed-mode surveys: The tailored design method*. Hoboken, NJ: John Wiley & Sons.

Droms, W.G. & Wright, J.O. 2010. *Finance and accounting for nonfinancial managers: All the basics you need to know*. New York: Basic Books.

Drucker, P.F. 1974. *Management: Tasks, responsibilities, practices.* New York: Harper & Row.

Drucker, P.F. 2008. *Management: Revised edition*. New York: HarperCollins.

Dumas, C. 1992. Integrating the daughter into family business management. *Entrepreneurship Theory & Practice*, 16:4, 41-55.

Dunn, B. 1999. The family factor: The impact of family relationship dynamics on business-owning families during transitions. *Family Business Review*, 12:1, 41-60.

Duysters, G. & Hagedoorn, J. 2002. External sources of innovative capabilities: The preference for strategic alliances or mergers and acquisitions. *Journal of Management Studies*, 39: 167-188.

Dyck, B., Mauws, M., Starke, F.A. & Mischke, G.A. 2002. Passing the baton: The importance of sequence, timing, technique and communication in executive succession. *Journal of Business Venturing*, 17:2, 143-162.

Dyer, W.G. & Handler, W. 1994. Entrepreneurship and family business: Exploring the connections. *Entrepreneurship Theory & Practice*, 19:1, 71-83.

Dyllick, T. & Hockerts, K. 2002. Beyond the business case for corporate sustainability. *Business Strategy and the Environment,* 11:2, 130-141.

Eastley, A. 2010. Interview.

Eilers, W., MacKay, R., Graham L. & Lefebvre, A. (eds). 2010. *Environmental sustainability of Canadian agriculture: Agri-environmental indicator report series – Report #3*. Agriculture and Agri-Food Canada, Ottawa, Ontario.

Fairweather, J.R. & Campbell, H.R. 2003. Environmental beliefs and farm practices of New Zealand farmers: Contrasting pathways to sustainability, *Agriculture and Human Values*, 20:3, 287-300.

Friesen, G. 2010. Interview.

Friesen, R. 2002. Farm succession plans: Everyone talks about them, not enough have them. *Manitoba Co-operator*.

Friesen, R. 2010. Young people still want to farm: Bring down barriers for young farmers, ag committee told. *Manitoba Co-operator*, May 6, 2010.

Froese, E. 2010. Create a farm succession action plan and relieve your stress. Retrieved from http://www.elainefroese.com/farm-succession-planning/
Geiser, C. 2013. *Data analysis with mplus*. New York: The Guilford Press.

Gersick, K., Davis, J., McCollom Hampton, M. & Lansberg, I. 1997. *Generation to generation: Life cycles in family business*. Boston: Harvard Business Press.

Gersick, K.E., Lansberg, I., Desjardins, M. & Dunn, B. 1999. Stages and transitions: Managing change in the family business. *Family Business Review*, 12:4, 287-297.

Goll, I. & Rasheed, A.A. 2004. The moderating effect of environmental munificence and dynamism on the relationship between discretionary social responsibility and firm performance. *Journal of Business Ethics*, 49, 41-54.

Gomez-Mejia, L.R., Haynes, K.T., Nunez-Nickel, M. & Moyano-Fuentes, J. 2007. Socioemotional wealth and business risks in family-controlled firms: Evidence from Spanish olive oil mills. *Administrative Science Quarterly*, 52:1, 106-137.

Goodland, R. 1995. The concept of environmental sustainability. *Annual Review of Ecology and Systematics*, 26:1, 1-24.

Gouldner, A.W. 1960. The norm of reciprocity: A preliminary statement. *American Sociological Review*, 25:2, 161-178.

Grant, A.M. & Wade-Benzoni, K.A. 2009. The hot and cool of death awareness at work: Mortality cues, aging, and self-protective and prosocial motivations. *Academy of Management Review*, 34: 600-22.

Gregoire, A. 2002. The mental health of farmers. *Occupational Medicine*, 52:8, 471-476.

Grote, J. 2003. Conflicting generations: A new theory of family business rivalry. *Family Business Review*, 16:2, 113-124.

Groves, R.M., Singer, E. & Corning A. 2000. Leverage-saliency theory of survey participation. *Public Opinion Quarterly*, 64:3, 299-308.

Habbershon, T.G. & Williams, M.L. 1999. A resource-based framework for assessing the strategic advantages of family firms. *Family Business Review*, 12:1, 1-22.

Hall, A. 2003. Strategising in the context of genuine relations: An interpretative study of strategic renewal through family interactions. *JIBS Dissertation Series*, 018, Jönköping, Sweden.

Hawken, P., Lovins, A.B. & Lovins, L.H. 2010. *Natural capitalism: The next industrial revolution*. London: Earthscan.

Hollander, B.S. & Bukowitz, W.R. 1990. Women, family culture, and family business. *Family Business Review*, 3:2, 139-151.

Howard, J.W. & Rothbart, M. 1980. Social categorization and memory for in-group and out-group behavior. *Journal of Personality and Social Psychology*, 38:2, 301-310.

Hynek, J. & Janecek, V. 2008. Economic justification of advanced manufacturing technology. Proceedings of the 2nd WSEAS International Conference on Management, Marketing and Finances. Harvard, MA., March 24-26, 2008.

Ibrahim, A.B., Soufani, K. & Lam, J., 2001. A Study of Succession in a Family Firm. *Family Business Review*, 14:3, 245-258.

Ibrahim, A.B., Soufani, K., Poutziouris, P. & Lam, J., 2004. Qualities of an effective successor: The role of education and training. *Education & Training*, 46:8/9, 474-480.

Intention. 2003. *Merriam-Webster's Collegiate Dictionary* (11th ed.), USA: Merriam-Webster.

James, A.E., Jennings, J.E. & Breitkreuz, R.S. 2011. Worlds apart? Rebridging the distance between family science and family business research. *Family Business Review*, 20:10, 1-22.

Janzen, H.H., Desjardins, R.L., Rochette, P., Boehm, M. & Worth, D. (Eds). 2008. *Better farming better air: A scientific analysis of farming practice and greenhouse gases in Canada*. Ottawa, ON, Canada: Agriculture and Agri-Food Canada.

Jenkins, H. 2006. Small business champions for corporate social responsibility. *Journal of Business Ethics*, 67:3, 241-256.

Jogaratnam, G., Tse, E.C. & Olsen, M.D. 1999. Strategic posture, environmental munificence, and performance: An empirical study of independent restaurants. *Journal of Hospitality & Tourism Research*, 23:2, 118-138.

Jordan, S.J., Hayes, S., Yoskowitz, D., Smith, L.M., Summers, J.K., Russell, M. & Benson, W.H. 2010. Accounting for natural resources and environmental sustainability: Linking ecosystem services to human well-being. *Environmental Science & Technology*, 44:5, 1530-1536.

JFBM (*Journal of Family Business Management*) Editorial Objectives. 2011. Retrieved from http://www.emeraldinsight.com/products/journals/journals.htm?id=jfbm

Kelly, L.M., Athanassiou, N. & Crittenden, W.F. 2000. Founder centrality and strategic behavior in the family-owned firm. *Entrepreneurship Theory & Practice*, 25:2, 339-358.

Kempton, W., Boster, J. S. & Hartley, J. A. 1995. *Environmental values in American culture*. Cambridge, MA: MIT Press.

Koberg, C.S. 1987. Resource scarcity, environmental uncertainty, and adaptive organization behavior. *Academy of Management Journal*, 30, 798-807.

Korsgaard, M.A., Meglino, B.M., Lester, S.W. & Jeong, S.S. 2010. Paying you back or paying me forward: Understanding rewarded and unrewarded organizational citizenship behavior. *Journal of Applied Psychology*, 95:2, 277-290.

Koys, D.J. 2001. The effect of employee satisfaction, organizational citizenship behavior, and turnover on organizational effectiveness: A unit-level, longitudinal study. *Personnel Psychology*, 54:1, 101-114.

Kusch, L. Province vows to save lake Winnipeg: New study warns farming could destroy water quality, *Winnipeg Free Press*, Retrieved from http://www.winnipegfreepress.com/local/province-vows-to-save-lake-winnipeg-122926793.html

Kusch, L. Hog blamed for lake woes: Province focuses on pig manure, ailing wetlands, sewage plants, *Winnipeg Free Press*, Retrieved from http://www.winnipegfreepress.com/local/hogs-blamed-for-lake-woes-123086573.html

Lambrecht, J. 2005. Multigenerational transition in family businesses: A new explanatory model. *Family Business Review*, 18:4, 267-282.

Lansberg, I. 1988. The succession conspiracy. *Family Business Review*, 1:2, 119-143.

Lansberg, I. & Astrachan, J.H. 1994. Influence of family relationships on succession planning and training: The importance of mediating factors. *Family Business Review*, 7:1, 39-59.

Latham, S.F. & Braun, M. 2009. Managerial risk, innovation, and organizational decline. *Journal of Management*, 35:2, 258-281.

Le-Breton Miller, I. & Miller, D. 2006. Why do some family businesses out-compete? Governance, long-term orientations, and sustainable capability. *Entrepreneurship Theory and Practice*, 30:6, 731-746.

LePine, J.A., Erez, A. & Johnson, D.E. 2002. The nature and dimensionality of organizational citizenship behavior:
A critical review and meta-analysis. *Journal of Applied Psychology*, 87:1, 52-65.

Liberman, N., Trope, Y. & Stephan, E. 2007. Psychological distance. In E.T. Higgins & A.W. Kruglanski (eds.), *Social psychology: Handbook of basic principles*, Vol. 2, pp. 353-382. New York: Guilford.

Lin, C-P., Hung, W-T. & Chiu, C-K. 2008. Being good citizens: Understanding a mediating mechanism of organizational commitment and social network ties in OCBs. *Journal of Business Ethics*, 81, 561-578.

Little, T.D., Cunningham, W.A., Shahar, G. & Widaman, K.F. 2002. To parcel or not to parcel: Exploring the question, weighing the merits. *Structural Equation Modeling*, 9, 151-173.

Litz, R.A. 1995. The family business: Toward definitional clarity. *Family Business Review*, 8:2, 71-81.

Litz, R.A. 2008. Two sides of a one-sided phenomenon: Conceptualizing the family business and business family as a möbius strip. *Family Business Review*, 21:3, 217-236.

Litz, R.A., Pearson, A.W. & Litchfield, S. 2011. Charting the future of family business research: Perspectives from the field. *Family Business Review*, Retrieved from: http://fbr.sagepub.com/content/early/2011/08/23/0894486511418489.

Lockett, A. 2005. Edith Penrose's legacy to the resource-based view. *Managerial and Decision Economics*, 26:2, 83-98.

Love, P.E.D. & Irani, Z. 2001. Evaluation of IT costs in construction. *Automation in Construction*, 10:6, 649-658.

Lynch, A. 2001. *All in the family, inc.: Insights from the corporate boardrooms and kitchen tables of Canadian family businesses*. Toronto: Macmillan Canada.

MacKenzie, S.B., Podsakoff, P.M. & Fetter, R. 1993. The impact of organizational citizenship behavior on evaluations of salesperson performance. *Journal of Marketing*, 57:1, 70-80.

MAFRI (Manitoba Agriculture, Food and Rural Initiatives). 2010. *State of Manitoba Agriculture.* Retrieved from http://www.gov.mb.ca/agriculture/statistics/pdf/ag_industry_overview.pdf

MAS (Manitoba Agriculture Statistics). 2006. *Agriculture Statistics*. Retrieved from http://www.gov.mb.ca/agriculture/statistics/ag_stat_factsheet/land_and_population.pdf

Masurel, E. 2007. Why SMEs invest in environmental measures: Sustainability evidence from small and medium-size printing firms. *Business Strategy and the Environment*, 16:3, 190-201.

Mazzola, P., Marchisio, G. & Astrachan, J.H. 2006. Using the strategic planning process as a next-generation training tool in family business. In P.K. Poutziouris, K.X. Smyrnios & S.B. Klein (eds.), *Handbook of Research on Family Business* (pp. 402-421). Cheltenham, UK: Edward Elgar.

McRae, T. Smith, C.A.S. & Gregorich, L.J. (eds.) 2000. *Environmental sustainability of Canadian agriculture: Report of the agri-environmental indicator project*. Ottawa, Ontario: Research Branch, Policy Branch, Prairie Farm Rehabilitation Administration.

Miller, D., Steier, L. & Le Breton-Miller, I. 2003. Lost in time: Intergenerational succession, change, and failure in family business. *Journal of Business Venturing*, 18:4, 513-531.

Miller, D. & Le Breton-Miller, I. 2003. Challenge versus advantage in family business. *Strategic Organization*, 1:1, 127-134.

Miller, D. & Le Breton-Miller, I. 2005. *Managing for the long run: Lessons in Competitive Advantage from great family businesses*. Boston: Harvard Business School Press.

Miller, D. & Le Breton-Miller, I. 2007. Kicking the habit: Broadening our horizons by studying family businesses. *Journal of Management Inquiry*, 16:1, 27-30.

Mitchell, R.K. & O'Neil, S.J. 1998. Feudal institutions and small business governance: An exploration and comparison. *Journal of Small Business and Enterprise Development*, 5:3, 208-218.

Mitura, V. & Trant, M. 2006. Canadian agriculture in 2005: A tough year in review. Agriculture Division of Statistics Canada.

Monge, P.R., Rothman, L.W., Eisenberg, E.M., Miller, K.I. & Kirste, K.K. 1985. The dynamics of organizational proximity. *Management Science*, 31:9, 1129-1141.

Morris, M.H., Williams, R.O., Allen, J.A., & Avila, R.A. 1997. Correlates of success in family business transitions. *Journal of Business Venturing*, 12:385-401.

Moulin, H. & Vial, J.P. 1978. Strategically zero-sum games: The class of games whose completely mixed equilibria cannot be improved upon. *International Journal of Game Theory*, 7: 3/4, 201-221.

MPEC (Manitoba Phosphorus Expert Committee). 2006. Recommendations for regulating phosphorus from livestock operations in Manitoba. Retrieved from http://www.gov.mb.ca/conservation/envprograms/livestock/pdf/final_report_manitoba_phosphorus_expert_committee.pdf

Murray, B. 2003. The Succession transition process: A longitudinal perspective. *Family Business Review*, 16:1, 17-33.

Noble, L.N. 2009. Paying it forward as a teacher-mentor: An interview with Bill Hill. *Teaching of Psychology*, 36:2, 140-147.

Olson, P.D., Zuiker, V.S., Danes, S.M., Stafford, K., Heck, R.K.Z. & Duncan, K.A. 2003. The impact of the family and the business on family business sustainability. *Journal of Business Venturing*, 18:5, 639-666.

Organ, D. W. (1997). Organizational citizenship behavior: It's construct clean-up time. *Human Performance*, 10, 85-97.

Penrose, E.T. 1959. *The theory of the growth of the firm*. New York: Wiley.

People and Plant. 2010. http://www.planetfriendly.net/

Podsakoff, P.M., MacKenzie, S.B., Moorman, R.H. & Fetter, R. 1990. Transformational leader behaviors and their effects on followers' trust in leader, satisfaction, and organizational citizenship behaviors. Leadership Quarterly, 1:2, 107-142.

Podsakoff, P.H. & MacKenzie, S.B. 1994. Organizational citizenship behaviors and sales unit effectiveness. *Journal of Marketing Research*, 31:3, 351-363.

Pronin, E, Olivola, C.Y. & Kennedy, K.A. 2008. Doing unto future selves as you would do unto others: Psychological distance and decision making. *Personality and Social Psychology Bulletin*, 34:2, 224-236.

Reiss, D. 1987. *The family's construction of reality*. Cambridge, MS: Harvard University Press.

Revell, A. & Blackburn, R. 2007. The business case for sustainability? An examination of small firms in the UK's construction and restaurant sectors. *Business Strategy and the Environment*, 16:6, 404-420.

Rosen, B. & Komorita, S.S. 1971. Attitudes and action: The effects of behavioral intent and perceived effectiveness of acts. *Journal of Personality*, 39:2, 189-203.

Rosen, R. 1991. Research and development with asymmetric firm sizes. *RAND Journal of Economics*, 3: 411-429.

Rosset, P. 2000. The multiple functions and benefits of small farm agriculture in the context of global trade negotiations. *Development*, 43:2, 77-82.

Rothenberg, S. & Ayglidopoulos, S.C. 2007. Determinants of environmental innovation adoption in the printing industry: The importance of task environment. *Business Strategy and the Environment*, 16, 39-49.

Russo, M.V. & Fouts, P.A. 1997. A resource-based perspective on corporate environmental performance and profitability. *Academy of Management Journal*, 40:3, 534-559.

Saha, B. & Trant, M. 2008. Canadian agriculture in 2007: Better farm prices and incomes as world demand for food increases. Agriculture Division of Statistics Canada.

Saha, B. & Mitura, V. 2009. Canadian agriculture in 2008: An overview of key events. Agriculture Division of Statistics Canada.

Schmid, A.A. 2000. Affinity as social capital: Its role in development. *Journal of Socio-Economics*, 29:2, 159-171.

Schreiber, J.B., Stage, F.K., King, J., Nora, A., & Barlow, E.A. 2006. Reporting structural equation modeling and confirmatory factor analysis results: A review. *The Journal of Educational Research*, 99: 6, 323-337.

Sharma, P., Chua, J.H. & Chrisman, J.J. 2000. Perceptions about the extent of succession planning in Canadian family firms. *Canadian Journal of Administrative Sciences*, 17:3, 233-244.

Sharma, P., Chrisman, J.J. & Chua, J.H. 2003a. Predictors of satisfaction with the succession process in family firms. *Journal of Business Venturing*, 18:5, 667-687.

Sharma, P., Chrisman, J.J. & Chua, J.H. 2003b. Succession planning as planned behaviour: Some empirical results. *Family Business Review*, 16:1, 1-16.

Sharma, P. 2004. An overview of the field of family business studies: Current status and directions for the future. *Family Business Review*, 17;1, 1-36.

Sharma, P. & Irving, P.G. 2005. Four bases of family business successor commitment: Antecedents and consequences. *Entrepreneurship Theory and Practice*, 29:1, 13-33.

Sharma, P., Hoy, F., Astrachan, J.H. & Koiranen, M. 2007. The practice-driven evolution of family business education. *Journal of Business Research*, 60:10, 1012-1021.

Sharma, P. & Sharma, S. 2011. Drivers of proactive environmental strategy in family firms. *Business Ethics Quarterly*, 21:2, 309-334.

Sharma, S. 2000. Managerial interpretations and organizational context as predictors of corporate choice of environmental strategy. *Academy of Management Journal*, 43: 681-697.

Sirmon, D.G. & Hitt, M.A. 2003. Managing resources: Linking unique resources, management, and wealth creation in family firms. *Entrepreneurship Theory & Practice*, 27:4, 339-358.

Smith, C.A., Organ, D.W. & Near, J.P. 1983. Organizational citizenship behavior: Its nature and antecedents. *Journal of Applied Psychology*, 68, 653-663.

Stafford K., Duncan, K., Danes, S. & Winter, M. 1999. A research model of sustainable family businesses. *Family Business Review*, 12:3, 197-208.

Starbuck, W.H. 1976. Organizations and their environments. In *Handbook of Industrial and Organizational Psychology*, Dunnette, M.D. (eds.) Chicago, IL: Rand-McNally.

Steg, L. & Vlek, C. 2009. Encouraging pro-environmental behaviour: An integrative review and research agenda. *Journal of Environmental Psychology*, 29:3, 309-317.

Stewart, A. 2003. Help one another, use one another: Toward an anthropology of family business. *Entrepreneurship Theory and Practice*, 27:4, 383-396.

Stewart, A. & Miner, A.S. 2011. The prospects for family business in research universities. *Journal of Family Business Strategy*, 2:1, 3-14.

Sturgeon, R. & Morrissette, P.J. 2010. A qualitative analysis of suicide ideation among Manitoban farmers. *Canadian Journal of Counselling*, 44:2, 191-207.

Tagiuri, R. & Davis, J.A. 1992. On the goals of successful family companies. *Family Business Review*, 5:1, 43-62.

The Sustainability Report. 2010. http://www.sustreport.org/

Thomas, T.E. 2005. Are business students buying it? A theoretical framework for measuring attitudes toward the legitimacy of environmental sustainability, *Business Strategy and the Environment*, 14:3, 186-197.

Tilley, F. 2000. Small firm environmental ethics: how deep do they go? *Business Ethics: A European Review*, 9:1, 31-41.

Uhlaner, L.M., van Goor-Balk, H.J.M. & Masurel, E. 2004. Family business and corporate social responsibility in a sample of Dutch firms. *Journal of Small Business and Enterprise Development*, 11: 2, 186-194.

United Nations International Year of Family Farming (2014). Retrieved from http://www.un.org/apps/news/story.asp/story.asp?NewsID=46566&Cr=food+security&Cr1#.UwmBuoXqhpU, and http://www.fao.org/family-farming-2014/en/.

van der Werf, H.M.G. & Petit, J. 2002. Evaluation of the environmental impact of agriculture at the farm level: A comparison and analysis of 12 indicator-based methods. *Agriculture, Ecosystems and Environment*, 93:1-3, 131-145.

van Mierlo, H., Vermunt, J.K. & Rutte, C.G. 2009. Composing group-level constructs from individual-level survey data. *Organizational Research Methods*, 12:2, 368-392.

Venter, E., Boshoff, C. & Mass, G. 2005. The influence of successor-related factors on the succession process in small and medium-sized family businesses. *Family Business Review*, 18:4, 283-303.

Vogel, D. 2005. *The market for virtue*. Washington, DC: Brookings Institution Press.

Wade-Benzoni, K.A. 2002. A golden rule over time: Reciprocity in intergenerational allocation decisions. *Academy of Management Journal*, 45:5, 1011-1028.

Wade-Benzoni, K.A. 2003. Intergenerational identification and cooperation in organizations and society. *Identity Issues in Groups*, 5, 257-277.

Wade-Benzoni, K.A. 2006. Legacies, immortality, and the future: The psychology of intergenerational altruism. *Research on Managing Groups and Teams*, 8, 247-270.

Wade-Benzoni, K.A. 2008. Maple trees and weeping willows: The role of time, uncertainty, and affinity in intergenerational decisions. *Negotiation and Conflict Management Research*, 1:3, 220-245.

Wade-Benzoni, K.A., Hernandez, M., Medvec, V. & Messick, D. 2008. In fairness to future generations: The role of egocentrism, uncertainty, power, and stewardship judgments of intergenerational allocations. *Journal of Experimental Social Psychology*, 44, 233-245.

Wade-Benzoni, K.A. & Tost, L.P. 2009. The egoism and altruism of intergenerational behavior. *Personality and Social Psychology Review*, 13:3, 165-193.

Wade-Benzoni, K.A., Sondak, H. & Galinsky, A.D. 2010. Leaving a legacy: Intergenerational allocations of benefits and burdens. *Business Ethics Quarterly*, 20:1, 7-34.

Wang, H., Law, K.S., Hackett, R.D., Wang, D. & Chen, Z.X. 2005. Leader-member exchange as a mediator of the relationship between transformational leadership and followers' performance and organizational citizenship behavior. *Academy of Management Journal*, 48:3, 420-432.

Ward, J.L. 1987. *Keeping the family business healthy: How to plan for continuing growth profitability and family leadership*. San Francisco: Jossey-Bass.

Weisberg, H.F. 2005. *The total survey error approach*. Chicago: The University of Chicago Press.

Welsh, J.A. & White, J.F. 1981. A small business is not a little big business. *Harvard Business Review* 59:4, 18-27.

Westhead, P. & Cowling, M. 1998. Family firm research: The need for a methodological rethink. *Entrepreneurship Theory and Practice*, 23:1, 31-56.

Wiesner, R., Chadee, D., Best, P. & Poole, N. 2010. Managing environmental sustainability in SMEs: Learning from the stars. Report for CPA Australia, Jan. 2010, 1-45.

Wilson, B. 2010. Help us build industry, says young farmer. *The Western Producer*, May 6, 2010.

Winzoski, J. 2010. Generation next: Farming lads plough ahead with farming tradition. *The Beausejour Review*, April 30, 2010.

Wu, H-L. 2008. When does internal governance make firms innovative? *Journal of Business Research*, 61:2, 141-153.

Zahra, S.A. & Sharma, P. 2004. Family business research: A strategic reflection. *Family Business Review*, 17:4, 331-346.

Yoon, M.H., Suh, J. 2003. Organizational citizenship behaviors and service quality as external effectiveness of contact employees. *Journal of Business Research*, 56, 597-611.

Zellweger, T.M., Nason, R.S., Nordqvist, M. & Brush, C.G. 2011. Why do family firms strive for nonfinancial goals? An organizational identity perspective. *Entrepreneurship Theory &*

Practice. Retrieved from: http://onlinelibrary.wiley.com.proxy2.lib.umanitoba.ca/doi/10.1111/j.1540-6520.2011.00466.x/pdf

Appendix 1
Semi Structured Interviews – Protocol of Questions

Manitoba Pork Council

1. How is Manitoba different from other provinces/states, aside from production levels? Does this continue to provide Manitoba with a competitive advantage?
2. What is the role of the Manitoba Pork Council vis-à-vis other councils and legislative bodies like Manitoba Agriculture, Food and Rural Initiatives?
3. What is the future intention of producers to remain as family farms?
4. What are the primary trends in the industry? (i.e. declining # of farms; increasing size of farms; increasing slaughter capacity)
5. What is the most critical issue facing pork industry
6. What is the nature of the environmental challenges facing the industry?
7. What responses are available to producers?
8. What role if any does intention to 'hand on the farm' in the decision to implement these responses?
9. What is the outlook for balancing economic and environmental sustainability?
10. What impact is the moratorium of no new barns in specified areas having on the industry?
11. What will have to change in order for the moratorium to be removed?
12. What is the motivation for "The family behind the farm" program?
13. How/where might the Asper School of Business research assist the industry?

Manitoba Rural Adaptation Council Inc. (MRAC)

1. What is the primary mandate for MRAC?
2. How can MRAC help to develop vibrant rural communities?
3. What is lacking in the development of a successful rural community?
4. How has MRAC been engaged in the process of supporting the family farmer and improving the environment for the next generation of agricultural producers?
5. What do the various stakeholders (i.e. family farmers, labour, rural communities, provincial government, lobby groups) need to be doing differently to help address these issues?
6. How are urban and rural communities going to work together?

Manitoba Agriculture, Food and Rural Initiatives (MAFRI)

1. How does MAFRI support the local farmer?
2. What agricultural statistics by sector does MAFRI track?
3. What are the primary trends in agriculture that have an impact on the family farm?
4. How has family farm succession been an issue on the province?
5. With increasing economic pressure on the family farm, how has "off-farm" income been a factor in the farm economy?

Keystone Agricultural Producers (KAP)

1. What is the primary mandate for KAP?
2. What is the size of KAP membership and how does KAP stay in touch with its members?
3. What pressures are producers facing in order to be viable as independent operators?
4. What challenges is the industry facing as farmers look to attract the next generation to take over?
5. What primary stress factors are producers facing?
6. How are environmental sustainability issues being addressed by the industry?
7. How successful have the initiatives to establish beneficial management practices been?

Signature Mediation

1. How does Signature Mediation support the local farmer?
2. What primary challenges are family farmers facing?
3. How has mediation services helped the family farmer?
4. How do you measure success in your services?
5. What groups of farmers more susceptible to facing issues of depression? (Gender? Industry sector? Age of generation?)

Appendix 2
Sample Survey Advertisement and Invitation
from Weekly KAP Alert – Feb. 24, 2012 to Mar. 30, 2012

Manitoba's Family Farms in the 21st Century:
A Research Survey

Jeremy Funk, a graduate student at the Asper School of Business, is doing research to better understand the relationship between family farm succession, intergenerational behaviour, and environmentally sustainable farming practices.

The study welcomes your input on several important questions such as:

• What are the challenges and opportunities involved with passing a farm on to the next generation?
• What are the most significant regulatory demands faced by Manitoba's farmers in 2012?
• What do Manitoba's farmers see ahead for their family farm's future?

If you are a family farm owner, you can help by participating in this survey.
It only takes 15-20 minutes and for your investment of time, you'll be eligible to win one of five-$100 cash prizes.
Click here to participate or contact Jeremy directly to receive a hard copy version to complete ([redacted] or [redacted]).

Appendix 3
Script for Requesting Participation in Family Farm Survey

Respondent: Hello, ABC Farm.

Researcher: May I please speak to the farm owner (or specific name if known)?

Respondent: This is the owner speaking.

Researcher: My name is Jeremy Funk and I am calling from the Asper School of Business at the University of Manitoba.

Respondent: Yes…

Researcher: The reason I am calling is about some research I am doing for my dissertation on family business where I am looking at Manitoba's Family Farms; more specifically, the challenges and opportunities involved with passing a farm on to the next generation, as well as the key issues related to environmentally sustainable farming practices.

Respondent: OK

Researcher: My call today is to request your participation in either an on-line or mail-in survey that you complete on your own time, as I realize you are extremely busy. All the information you submit is completely confidential with aggregate results going back to participants. The survey takes about 20 minutes. I've had a number of other farmers from your district participate so far and it has been very helpful, but I need more participants to ensure my results are truly representative of the MB farm community.

Respondent: OK

Researcher: I appreciate your willingness to help me out.

Respondent: OK (details for sending the on-line link or mailing a copy arranged)

Script for Leaving a Message

Greeting (Morning, Afternoon, or Evening)

This is a message for (specific name and any information that would describe how I got their contact information).

My name is Jeremy Funk and I am calling from the Asper School of Business at the University of Manitoba.

The reason I am calling is about some research I am doing for my dissertation on family business where I am looking at Manitoba's Family Farms; more specifically, the challenges and opportunities involved with passing a farm on to the next generation, as well as the key issues related to environmentally sustainable farming practices.

I am requesting your participation in a survey that can either be done on-line or hard copy. You complete it on your own time, as I realize you are extremely busy. All the information you submit is completely confidential with aggregate results going back to participants.

I would appreciate hearing back from you in order to confirm how best to send you the survey. You can call me at [redacted] or if you prefer, email me at [redacted].

Thanks for your time--Take care!

Appendix 4

SURVEY ON MANITOBA'S FAMILY FARM PRODUCERS

Welcome to our study on Manitoba's family farms and thank you for taking the time to participate.

This study is being conducted by Mr. Jeremy Funk, a Ph.D student in Business Administration, working under the supervision of Dr. Reg Litz of the I.H.Asper School of Business at the University of Manitoba. Mr. Funk may be reached at either [redacted] or [redacted] and Dr. Reg Litz may be reached at [redacted] or [redacted].

The purpose of the survey is to study the state and future of Manitoba's family farms. Within this survey you will be asked to respond to questions about your particular farm operation and your feelings, thoughts and perceptions related to your experiences of owning, operating and potentially passing on your family farm to the next generation.

There are no known psychological, physical, economic or social risks associated with participating in this study. You are not going to be asked to make any financial commitments, nor are you obliged to answer any questions that you find uncomfortable. Your participation in this study should be entirely voluntary, and you can choose to discontinue the survey at any point.

In addition, please be assured that your responses in this study will be treated in complete confidence. Your responses will not be viewed by anyone other than the researchers mentioned in this introduction. You are at no risk of proprietary information being divulged to any regulatory authorities. Finally, you will have the opportunity to request summary results of our findings and also participate in a further in-depth study.

Please place the completed survey in the postage-paid envelope provided and place in the mail.

The Joint-Faculty Research Ethics Board at the University of Manitoba has approved this research. If for any reason you have concerns or complaints related to this study, please contact the author or the University of Manitoba Human Ethics Coordinator at [redacted] or by e-mail at [redacted].

Thank you again for your participation in this study.

Jeremy Funk
Research Associate

Reg Litz
Research Supervisor

Conducted for Ph.D. Dissertation Research at the I. H. Asper School of Business - University of Manitoba

If you choose to complete the survey, it will take about 20-30 minutes.

Please indicate your willingness to participate

- ❑ I agree to participate in the study described above.
- ❑ I do not agree to participate in the study described above.

I – TELL US ABOUT YOURSELF

This demographic information is about you and your farming involvement and will help us to analyze and compare survey results.

(1) Year of Your Birth _____

(2) Gender: ❑ Male ❑ Female

(3) Which of the following best describes your current marital status?

❑ Single ❑ Widow/Widower
❑ Married ❑ Divorced/Separated
❑ Common Law

(4) What generation of family do you represent in this farm operation? (Consider the founding generation as 1st)

❑ 1st (you founded the farm) ❑ 4th (your or your spouse's great grandparents founded the farm)
❑ 2nd (your or your spouse's parents founded the farm) ❑ Other (please specify) _____
❑ 3rd (your or your spouse's grandparents founded the farm)

(5) Do you own this farm?

❑ All ❑ Some ❑ None

(6) If "All" or "Some", how did you come to be an owner in your farm?

❑ Bought in to the family farm ❑ Married in to the family farm
❑ Inherited the farm from family ❑ Other (please specify) _____

(7) What is the single most important reason why you are involved in your family farm?

_____

II – TELL US ABOUT YOUR FAMILY'S INVOLVEMENT ON YOUR FARM

This information is useful for understanding the extent to which family contributes to the farm operation.

(8) What is the Postal Code of your farm? _____

(9) Approximately what year did your family or in-laws first reside at or homestead on this farm property? _____

(10) How many family members aged 18 or older resided on the family farm property as of Dec. 31, 2011? _____

(11) Including yourself, how many of these family members work <u>ON</u> the farm … (please write the number in the appropriate space below; leave blank for zero)

_____ more than 70 hours per week? _____ 30-39 hours per week?
_____ 60-69 hours per week? _____ 20-29 hours per week?
_____ 50-59 hours per week? _____ 10-19 hours per week?
_____ 40-49 hours per week? _____ < 10 hours per week?
_____ do not work at all <u>on the farm?</u>

(12) Including yourself, how many of these family members work <u>OFF</u> the farm…(please write the number in the appropriate space below; leave blank for zero)

_____ more than 70 hours per week? _____ 30-39 hours per week?
_____ 60-69 hours per week? _____ 20-29 hours per week?
_____ 50-59 hours per week? _____ 10-19 hours per week?
_____ 40-49 hours per week? _____ < 10 hours per week?
_____ do not work at all <u>off the farm?</u>

III – TELL US ABOUT YOUR FARM'S CORPORATE ORGANIZATION

These questions focus on the ownership and management structures of your farm operation.

(13) What is the ownership arrangement of your farm operation?

- ❑ Sole proprietorship
- ❑ Partnership without a written agreement
- ❑ Partnership with a written agreement
- ❑ Family corporation (including corporations with one shareholder) – please indicate approx. year of incorporation _____
- ❑ Non-family corporation (please indicate approx. year of incorporation) _____

(14) If <u>not</u> a sole proprietorship, about what portion (%) of the farm do each of the following own?

- _____ % is owned by myself
- _____ % is owned by my spouse/partner
- _____ % is owned by my parents / my spouse/partner's parents
- _____ % is owned by my/our children
- _____ % is owned by non-family
- _____ % other owner: (specify) _____

IV – TELL US ABOUT YOUR FAMILY FARM'S OPERATIONS

This information is about the size and type of your farm operation.

(15) Indicate the number of acres used by your farming operation in <u>2011</u> in <u>each</u> of the following categories:

- _____ Owned
- _____ Leased from Government (Crown Land)
- _____ Leased from Other Owners
- _____ Crop-shared from Other Owners
- _____ Other (please specify, e.g. land trading, rent free, rent to others, etc.) _____

(16) Indicate the total number of livestock on your farming operation in <u>2011</u> in <u>each</u> of the following categories:

- _____ Beef Cattle
- _____ Dairy Cows
- _____ Hogs (type of operation) _____ (i.e., farrow to feeder, farrow to finisher, feeder)
- _____ Poultry
- _____ Sheep/Goats
- _____ Other (please specify) _____

(17) Which of the following <u>best</u> describes your farm operation in <u>2011</u>? (indicate only one)

- ❑ We are an **Oilseed & Grain** farm (i.e. soybean, oilseed, dry pea & bean, wheat, corn, rice & other grain)
- ❑ We are a **Vegetable & Melon** farm (i.e. potatoes, carrots & other vegetables)
- ❑ We are a **Fruit & Tree Nut** farm
- ❑ We are a **Greenhouse, Nursery & Floriculture** operation (i.e. nursery tree production, crops grown under cover, & mushrooms)
- ❑ We are an '**Other Crop'** farm (i.e. hay, fruit & vegetable combination, all other crop farming)
- ❑ We are a **Cattle** ranch **or Dairy** farm (i.e., beef cattle, feedlot, dairy cattle & milk production)
- ❑ We are a **Hog & Pig** farm
- ❑ We are a **Poultry & Egg** farm (i.e., chicken eggs, broilers, turkeys, poultry hatcheries, combination poultry & egg, other poultry)
- ❑ We are a **Sheep & Goat** farm
- ❑ We are an '**Other Animal'** farm (i.e., apiculture, horse & equine production, fur-bearing animal & rabbit production, other animals)
- ❑ We are **None of the above** (please specify what are the most important activities from the above list) _____

V – TELL US ABOUT YOUR VISION FOR YOUR FARM'S FUTURE

These questions are about your plans for your farm's future operations.

(18) When you think about your farming activities, how important are each of the following goals? Indicate the degree of importance for each item.

	Not Important	Minimally Important	Moderately Important	Important	Very Important
To build up farm, wealth and family assets	❑	❑	❑	❑	❑
To earn a high personal income	❑	❑	❑	❑	❑
To improve resource/land conditions	❑	❑	❑	❑	❑
To be a good steward of the land	❑	❑	❑	❑	❑

VI – TELL US ABOUT YOUR PLANS FOR YOUR FARM'S FUTURE

This information relates to planning for your future farm operations and plans for family succession.

(19) How much have you thought about passing your farm on to your children during the past month?

❑ Not at all ❑ A little bit ❑ Quite a bit ❑ A lot

(20) To the extent you have thought about it, what is the single most important factor that concerns you?

_____

(21) Consider the process of transferring your farm on to your children. Indicate the extent to which you agree with each of the following statements.

	Strongly Disagree	Disagree	Neither Agree nor Disagree	Agree	Strongly Agree
1 Keeping family involved in the farm is important to my/my spouse's parents	❑	❑	❑	❑	❑
2 Keeping family involved in the farm is important to me	❑	❑	❑	❑	❑
3 Keeping family involved in the farm is important to my children	❑	❑	❑	❑	❑
4 I would like to sell this farm to someone from within the family	❑	❑	❑	❑	❑
5 I would like to sell this farm to someone from outside of the family	❑	❑	❑	❑	❑
6 I feel overwhelmed by the complexity of all that is involved in keeping the farm in the family	❑	❑	❑	❑	❑

(22) Consider the process of transferring your farm on to your children. Indicate the extent to which you agree with each of the following statements.

	Strongly Disagree	Disagree	Neither Agree nor Disagree	Agree	Strongly Agree
1 I have identified my successor(s)	❑	❑	❑	❑	❑
2 I have identified specific skills and abilities that my successor(s) will require	❑	❑	❑	❑	❑
3 The person(s) identified to take over the farm is being trained for their future leadership role on the farm	❑	❑	❑	❑	❑
4 The person(s) identified to take over the farm is familiar with all the employees of the farm operation	❑	❑	❑	❑	❑
5 The person(s) identified to take over the farm possesses the skills needed to run all current operations	❑	❑	❑	❑	❑

(23) Using the following 7-point scale, ranging from "strongly disagree" to "strongly agree," indicate to what extent you agree with the following statements.

	Strongly Disagree	Disagree	Somewhat Disagree	Neither Disagree or Agree	Somewhat Agree	Agree	Strongly Agree
1 The previous generation of this farm's owners did their part to help preserve our farm's resources	❑	❑	❑	❑	❑	❑	❑
2 My present decisions will benefit the next generation of owners in the near future	❑	❑	❑	❑	❑	❑	❑
3 My present decisions will benefit the next generation of owners in the distant future	❑	❑	❑	❑	❑	❑	❑
4 I am uncertain about whether my present decisions will benefit my children in the future	❑	❑	❑	❑	❑	❑	❑
5 I feel I have a good understanding of how my children feel about the farm	❑	❑	❑	❑	❑	❑	❑
6 My children and I feel the same way about the farm	❑	❑	❑	❑	❑	❑	❑
7 I am able to imagine my children as the future owners of this farm	❑	❑	❑	❑	❑	❑	❑
8 I understand the impact that my present decisions have on my children as future owners of this farm	❑	❑	❑	❑	❑	❑	❑

VII – TELL US ABOUT THE ENVIRONMENTAL FARM MANAGEMENT PRACTICES ON YOUR FARM

These questions are about the type of environmentally sustainable farming practices used on your farm.

(24) What is the single most demanding environmental regulation you currently face in your farming operation?

_____

(25) To what extent do you agree with each of the following statements about environmentally sustainable farm management practices?

	Strongly Disagree	Disagree	Neither Agree nor Disagree	Agree	Strongly Agree
1 On our farm we comply with environmental rules and regulations even when no one is watching	❑	❑	❑	❑	❑
2 We provide environmental regulatory reports earlier than required	❑	❑	❑	❑	❑
3 We generally provide all information requested by environmental regulators	❑	❑	❑	❑	❑
4 A lot of our time on the farm is taken up by completing environmental regulations	❑	❑	❑	❑	❑
5 We generally find environmental regulations accomplish very little	❑	❑	❑	❑	❑
6 We generally attend our agricultural association meetings	❑	❑	❑	❑	❑
7 We consider agricultural association meetings to be important	❑	❑	❑	❑	❑
8 We regularly keep up with agricultural announcements and regulatory notices	❑	❑	❑	❑	❑
9 We generally seek to solve problems with environmental regulations as early as possible	❑	❑	❑	❑	❑
10 We are mindful of how our agricultural activities affect other people's land	❑	❑	❑	❑	❑
11 We willingly help other farmers who have environmental problems	❑	❑	❑	❑	❑
12 We are generally ready to lend a helping hand to our neighbours	❑	❑	❑	❑	❑
13 We generally do more than is required by existing environmental regulations	❑	❑	❑	❑	❑
14 We feel overwhelmed by all that is involved in complying with existing environmental regulations	❑	❑	❑	❑	❑

(26) How often are each of the following practices carried out on your farm?

	Does not Apply	Never	Rarely	Sometimes	Quite Often	Very Often	
1 Minimize the average number of days per year that soil is bare under specific cropping and tillage practices	❑	❑	❑	❑	❑	❑	
2 Apply the minimum amount of fertilizer		❑	❑	❑	❑	❑	❑
3 Test the soil for fertilizer concentration		❑	❑	❑	❑	❑	❑
4 Follow recommended methods for manure storage	❑	❑	❑	❑	❑	❑	
5 Use non-chemical pest control methods		❑	❑	❑	❑	❑	❑

(27) How often are each of the following practices carried out on your farm?

	Does not Apply	Never	Rarely	Sometimes	Quite Often	Very Often	
1 Minimize water erosion through erosion control practices		❑	❑	❑	❑	❑	❑
2 Reduce wind erosion through reduced tillage practices	❑	❑	❑	❑	❑	❑	
3 Reduce the loss of organic carbon in soil by increasing crop residues	❑	❑	❑	❑	❑	❑	
4 Reduce the risk of soil salinization through practices such as permanent land cover	❑	❑	❑	❑	❑	❑	

(28) How often are each of the following practices carried out on your farm?

	Does not Apply	Never	Rarely	Sometimes	Quite Often	Very Often	
1 Monitor the risk of water contamination by nitrogen from farmland based on the Canadian Water Quality Guidelines	❑	❑	❑	❑	❑	❑	
2 Monitor the contribution of phosphorus from manure to surface waters	❑	❑	❑	❑	❑	❑	
3 Monitor the transfer of phosphorus from mineral fertilizers to surface waters	❑	❑	❑	❑	❑	❑	
4 Monitor the emissions of nitrous oxide, methane, and carbon dioxide	❑	❑	❑	❑	❑	❑	
5 Monitor soil quality in order to reduce residual nitrogen	❑	❑	❑	❑	❑	❑	
6 Monitor energy use in order to reduce energy inputs	❑	❑	❑	❑	❑	❑	
7 Monitor energy use in order to increase agricultural outputs	❑		❑	❑	❑	❑	❑

(29) Did your farming operation use any of the following alternative technologies in 2011? Check one answer for each of the following technologies:

	Unfamiliar with this technology	Did not use this technology	Did use this technology
Electric vehicles	❑	❑	❑
Hybrid vehicles	❑	❑	❑
Solar panels	❑	❑	❑
Wind turbines	❑	❑	❑
Geothermal heating	❑	❑	❑
Biomass energy	❑	❑	❑
Composting organic waste	❑	❑	❑
Recycling non-organic waste (e.g., plastics)	❑	❑	❑
Other energy source: _____	❑	❑	❑

VIII – TELL US ABOUT YOUR FARM'S FINANCIAL PERFORMANCE

This information will help us understand your farm's economic performance and is strictly confidential.

(30) Indicate the extent to which you agree with each of the following statements.

	Strongly Disagree	Disagree	Neither Agree nor Disagree	Agree	Strongly Agree
1 I was satisfied with our family's 2011 farm income	❑	❑	❑	❑	❑
2 I was satisfied with our family's 2011 off-farm income	❑	❑	❑	❑	❑
3 This farm is definitely not for sale	❑	❑	❑	❑	❑
4 I have received or considered an actual offer to purchase this farm during 2011	❑	❑	❑	❑	❑
5 I have seriously considered selling this farm during the past 10 years	❑	❑	❑	❑	❑

(31) What is your best estimate as to the current $ market value of your farm's assets in each of the following categories? (Market value is the cost you would have to pay to replace the particular asset)

_____ Land

_____ Buildings (i.e., houses, barns & storage facilities)

_____ Equipment (i.e., tractors, harvesters, planting & tillage equipment, vehicles)

_____ Livestock (i.e., cattle, horses, pigs, poultry)

_____ Inventory (i.e., feed, fertilizer, harvested crops)

_____ General (i.e., not specific to a particular asset category)

(32) What is the total level of $ debt associated with each of your farm's assets?

_____ Land

_____ Buildings (i.e., houses, barns & storage facilities)

_____ Equipment (i.e., tractors, harvesters, planting & tillage equipment, vehicles)

_____ Livestock (i.e., cattle, horses, pigs, poultry)

_____ Inventory (i.e., feed, fertilizer, harvested crops)

_____ General (i.e., not specific to a particular asset category)

(33) What were the TOTAL MARKET SALES (in dollars) from 2011 farm operations including all market sales from crop and livestock products?

_____

(34) What were the TOTAL GOVERNMENT PROGRAM PAYMENTS received (in dollars) from 2011?

_____

(35) What were the TOTAL $ FARM OPERATING EXPENSES in 2011? (machinery operation, rent, seed, fertilizer, labour, feed, utilities, but not dividends)

_____

(36) What was the TOTAL OFF-FARM INCOME (in dollars) from 2011?

_____

(37) If your farm (including land, buildings, equipment, livestock, inventory and general assets) was for sale, what is the <u>lowest</u> $ value that you would consider to be a "serious offer"?

_____

(38) If you have any additional comments, please feel free to write them here.

_____

_____

_____

_____

_____

_____

IX – WE WOULD LIKE TO INVITE YOUR FAMILY TO TELL US MORE

We are interested in also learning from your farm family. We require multiple research participants from the same family, but representing different generations to volunteer for Part II of our study. All participants will be entered into an additional draw to win one of ten-$50 cash prizes. If you are interested in helping us out, please fill in your contact information below.

Name _____ Phone No. _____ email _____

X – IF YOU ARE INTERESTED IN WHAT WE FIND THROUGH THIS STUDY

If you would like to receive the summary results from our research, please provide your contact information below.

Name _____ Phone No. _____ email _____