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**Women's Management Strategies and Growth in Rural Female-Owned Family
Businesses**

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Women's Management Strategies and Growth in Rural Female-Owned Family Businesses

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Prior research indicates not only that family businesses have fewer management controls in place and are more likely to have non-economic goals for their firm but also that female-controlled businesses tend to underperform compared to male-controlled businesses. In this article, we analyze the performance effects of management controls and goals for the business across both male and female-controlled farm and rural family businesses. The results suggest that female-controlled farm and rural family businesses do not underperform their male counterparts in terms of objective or subjective assessments of performance. This is an important finding, given the mixed results across the family business literature regarding the impacts of gender on performance. Our results do indicate, however, that management controls and strategies and goals for the firm influence objective and subjective performance differently across male and female-controlled farm and rural family businesses.

Key words: family business, rural, agency theory, gender

JEL codes: J16, M20

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Women's Management Strategies and Growth in Rural Female-Owned Family Businesses

The tenets of agency theory indicate that family businesses have an advantage over nonfamily businesses due to greater objective alignment and subsequently, reduced agency costs (Fama and Jensen, 1983; Schulze, Lubatkin, and Dino, 2003). Empirical analyses have found that family businesses do incur lower agency costs than nonfamily firms, and as a result researchers have worked to examine whether performance in family and nonfamily businesses differ due to lower agency costs (Gomez-Mejia, Nuñez-Nickel, and Gutierrez, 2001; Schulze, Lubatkin, Dino and Buchholtz, 2001; Schulze et al., 2003; Villalonga and Amit, 2006). Despite the lower agency costs incurred by family businesses, researchers generally agree that family businesses should implement management strategies and control mechanisms to assist in further reducing agency costs (James, 1999; Chrisman, Kellermanns, Chan, and Liano, 2010) and that the implementation of such measures to monitor the achievement of short-term and long-term objectives heightens family firm performance (Chrisman, Chua, Kellermanns, and Chang, 2007).

Strategic planning, monitoring and management practices have been consistently argued as a critical component of family business performance (e.g., Chrisman et al, 2005; Eddleston, Kellermanns, and Sarathy, 2008; Sirmon and Hitt, 2003), especially since family businesses are often considered less professionalized than their nonfamily business peers. However, questions continue to arise since how performance is perceived may also depend on important factors like the nature of the business, gender, and goals of the business owner(s) and manager(s). Danes, Stafford, and Loy (2007) contend that relatively little is known about the influence of business management practices on family businesses, since

many studies overlook important family and business aspects in such explorations (Fitzgerald, Haynes, Schrank, and Danes, 2010).

In the general family business literature, farm and rural family businesses have been overlooked as an important subsample with distinct characteristics and goals. Likewise, although many farms and rural businesses are run as family businesses, the family aspect is often ignored in both the agribusiness and rural business literatures (Gasson et al., 1988; Getz and Carlson, 2000). Further, in the agribusiness and agricultural economics literatures, the term “family farm,” tends to refer to small, disadvantaged farms that are relatively less competitive than “corporate farms.” This definition does not take the full spectrum of family farms and rural businesses into consideration, however, since traditionally family businesses are defined as businesses in which either more than one family member has an ownership stake or businesses in which more than one family member works on a greater than part-time basis. When a broader definition is employed, Gasson et al. (1988) found that family dimensions may be important to the success of larger family farms. Getz and Carlson (2000; 2005) argue that farm family business expansions are often taken on by women to support the main operation. Prior research suggests that both supplemental income (Nickerson, Black, and McCool, 2001; Pearce, 1990) and improving the attractiveness of the business to heirs (Evans and Ilbery, 1989) are among some of the major reasons that farm businesses expand into the rural tourism and hospitality industries.

Research suggests that women are increasing their involvement in farm and rural businesses (Albright, 2006). The 2002 Census of Agriculture showed a 40% increase in the number of women farm operators in the preceding decade, with women comprising more than one quarter of farm operators in the US. Moreover, according to the 2007 Census of

Agriculture (USDA, 2007), the number of women operators increased by 19% from 2002, exceeding the number of farmers overall, which only grew by 7%. Family business researchers contend that gender differences in the implementation of management practices and the impact this holds on both objective and subjective measures of family business performance have been underexplored in the relevant literatures (Danes et al., 2007). Recent research in agricultural economics confirms this since both farm and nonfarm rural women business operators in Arkansas admitted difficulty in finding information related to best management practices for their businesses (Albright, 2006).

This article attempts to address the calls of prior researchers regarding further exploration of the roles management strategies, gender, and goals play on both objective and subjective measures of performance for farm and rural family businesses. For the purposes of this article, we consider a family business one that has at least two members of the family holding ownership interest in the business or that has at least one other family member aside from the owners working in the business on at least a part-time basis. We take an agency theoretic approach to address the management strategies-performance phenomenon, as well as the role of goals on farm and rural family business performance. To explore these phenomena, we utilize a sample of 576 men and women-controlled farm and rural businesses in the Midwestern United States. We believe such work gives consideration to the under-explored phenomenon of: (1) the effect of management strategy and control implementation on both men and women controlled farm and rural family business performance; (2) the influence of goals on men and women controlled farm and rural family business performance; and, (3) any differences that may exist between men and women controlled businesses' objective and subjective measures of performance.

The remainder of the article is organized as follows. Next we address the role of agency theory in strategic planning, management practices, and goal-setting for family businesses. Additionally, we briefly review the family business gender literature to assist in developing our hypotheses related to performance differences across male and female-owned family businesses. Then, we empirically investigate this phenomenon using discrete choice models. We examine the influence of management strategies implementation and economic versus non-economic goals for their influence on both objective profit categories and a subjective measure of perceived performance of female-owned and male-owned family businesses, while controlling for other family and business specific characteristics, such as age, education level, marital status, and number of employees. Finally, we report our results and provide both academic and practical implications of our findings.

Agency Theory in Family Business Research

Since agency theory deals with goal alignment (Fama and Jensen, 1983) between principals and agents, agency theory is often used to underpin explorations of performance differences between family and nonfamily firms. Under the tenets of agency theory, the goals of family owners and managers are assumed to hold greater alignment; thus, family firms are often argued to accrue lower agency costs (Fama and Jensen, 1983; Schulze, Lubatkin, and Dino, 2003). As a result, fewer management controls are needed or implemented to reduce agency issues and informal controls, such as trust, are relied on in their place (Gomez-Mejia, Nuñez-Nickel, and Gutierrez, 2001; Zahra, Hayton, and Salvato, 2004). Despite this advantage for family firms, researchers contend that family businesses must incorporate formal control measures, such as monitoring short-term and long-term objective achievement, formal plans, human resources policies, written agreements among owners and managers, etc. to mitigate

agency problems prevalent in family businesses (e.g., excessive altruism, free riding, shirking) (Chrisman, Chua, Kellermanns, and Chang, 2007). Even in family businesses, the implementation of agency control mechanisms has been found to improve objective performance (Chrisman et al, 2007). Based on prior research, we expect the following.

Hypothesis 1: Both male and female-controlled farm and rural family businesses implementing greater levels of management control will report higher levels of objective performance.

Hypothesis 2: Both male and female-controlled farm and rural family businesses implementing greater levels of management control will report higher levels of subjective performance.

The tenets of agency theory suggest that managers with rational economic goals will work to maximize profit (Zahra, 2005). However, researchers indicate that family businesses often have goals outside the classic economic context of profit maximization (Chrisman et al., 2012; Vesper, 1980). The presence and pursuit of non-economic goals is purported to influence family business behavior and performance (Astrachan and Jaskiewicz, 2008). Westhead and Howorth (2007) argue that family firms may choose to simultaneously pursue economic (i.e., profit maximization and wealth creation) and non-economic objectives (i.e., employment for family members, family support, socio-emotional wealth). Prior research suggests, however, that either economic or non-economic objectives likely dominate and set the strategic posture of the firm (Getz and Petersen, 2005). Family and business specific characteristics likely influence the family's adoption of primarily economic-centered or non-economic-centered goals for the firm (Westhead and Howorth, 2007). Economic oriented goals are considered a motivating force related to the implementation of agency controlling

measures (Chrisman et al., 2007; Zahra, 2005). We expect that economic-centered goals align with the use of management strategies and control measures; thus, augmenting firm performance through the reduction of agency costs. Our hypotheses related to economic oriented goals follow.

Hypothesis 3: Both male and female-controlled farm and rural family businesses that primarily choose economic goals will report higher levels of objective performance than those primarily choosing family-centered goals.

Hypothesis 4: Both male and female-controlled farm and rural family businesses that primarily choose economic goals will report higher levels of subjective performance than those primarily choosing family-centered goals.

Performance Differences across Male and Female-Controlled Family Businesses

Orser, Riding, and Manley (2006) argued that women-owned firms are smaller, are less likely to grow than counterpart firms owned by men, and are overrepresented in the retail and service sectors. These factors are believed to be associated with issues in women entrepreneur's self-confidence and fear of initiating large businesses that involve a considerable amount of capital and risk. Women entrepreneurs may be self-restricting their goal of business growth by avoiding opportunities that require large initial investments. Verhaul and Thurik (2001) ultimately believe that "female entrepreneurs may have different ambitions and objectives than male entrepreneurs" which may explain goal-setting, business decisions, policy implementation, and ultimately performance.

In terms of gender and performance, there is generally consensus among scholars that women entrepreneurs underperform relative to their male counterparts when data are examined at a cumulative level (Du Rietz and Henrekson, 2000; Watson, 2003). However,

researchers controlling for factors such as size of business and industry (Collins-Dodd et al., 2004; Orser et al., 2006) often show that there is no statistically significant difference between women and men entrepreneurs' performance. Kalleberg and Leicht (1991) find that determinants of survival and success operated in much the same way for women and men, suggesting that the processes underlying small business performance are similar regardless of gender.

In terms of how women and men strategically manage, certain authors contend that women are more oriented towards personal relationships than men and experience greater influence from family history. Women are argued to feel more vulnerable to risk and make a stronger connection with customers and employees (Bird and Brush, 2002; Danes et al., 2007). Some studies (Loscocco and Leicht, 1993; Verheul and Thurik, 2001) have confirmed that women entrepreneurs typically differ from men in that they were more likely to work part-time because of domestic responsibility, had less financial management experience, and spent less time networking than their male counterparts.

Chell and Baines (1998) propose that performance is itself a gendered concept. They question whether the traditional profit-based measures should be the sole evaluation of performance or whether performance can be redefined by women's own subjective standards of success. This line of thought is echoed in the family business literature as survey methods have moved beyond objective economic measures to capture subjective non-economic measures of perceived success such as owner satisfaction, customer satisfaction, family involvement, personal development, and personal achievement (Rosenblatt et al., 1985; Danes and Olson, 2003; Philbrick and Fitzgerald, 2007; Clark and Marshall, 2010; Westhead

and Howorth, 2007). Based on prior work related to gender and performance, we expect the following.

Hypothesis 5: Female-controlled businesses will be associated with lower objective performance than male-controlled businesses.

Hypothesis 6: Female-controlled businesses will be associated with higher subjective performance than male-controlled businesses.

Data and Methodology

The data used in the subsequent analyses are from the 2010 Intergenerational Farm and Non-Farm Family Business Survey. The 2010 Intergenerational Farm and Non-Farm Family Business Survey was a 30-minute telephone survey of rural farm and non-farm family businesses. The sample consists of a convenience sample of 2,097 small and medium sized farms Illinois, Indiana, Michigan, and Ohio; and a random sample of 1,059 small Indiana rural family businesses. The final sample fielded by the University of Wisconsin Survey Center consisted of 3,156 cases from April 2011-February 2012. Cases with no contact information were removed for a total of 2,163 viable cases. The sample contains 736 observations of which 721 are complete interviews and 15 are usable partial complete interviews. The Farm sample has 653 (641 complete) observations and the Non-Farm has 83 (80 complete) observations. The response rate was 34% overall, with the Farm sample at 44% and the Non-Farm Indiana sample at 12%. The final sample for this analysis consists of 576 usable observations, of which 224 are women and 353 are men. Descriptive statistics are shown in table 1.

Empirical Models

We used probit analysis to model family business success for women and men. Family business success was modeled with both an objective and a subjective measure. Financial measures such as profit, income, or sales are the most frequent indicators of family business success. However, subjective indicators such as motivation, goals, and perceptions are also important in providing the entire context of family business success (Olson et al. 2003).

The objective measure of family business success examined in our analyses was business profit. Because profit was a categorical question and businesses fell into two distinct groups, profit was employed in our probit analyses as a binary measure. Those that have a profit greater than \$50,000 were categorized as $Y=1$ and those that had a profit less than \$50,000 were categorized as $Y=0$. As shown in table 1, approximately 52% of women and 60% of men had a profit greater than \$50,000.

The subjective measure of family business success was the owner's perception of success. Respondents were asked the question: "Overall, would you say that, so far, your family business is very unsuccessful, somewhat unsuccessful, somewhat successful, very successful, or are you uncertain?" We then modeled the owners' perception of success as a binary measure where $Y=1$ if the owner responded they were very successful and $Y=0$ otherwise. Approximately 29% of women and 31% of men responded that they believed their businesses were very successful.

We use two probit models to analyze the objective measure of success (profit) and the subjective measure of success (perception of business success). The probit model is as follows: $y^* = x'B + u$; where y^* is objective success (subjective success), x' is a vector of explanatory variables, and u is the error term which is normally distributed. Because, y^* is

not observable, we therefore observe $Y = \begin{cases} 1 & \text{if } y^* > 0 \\ 0 & \text{if } y^* \leq 0 \end{cases}$. Marginal effects are calculated as $\beta_j \Phi(x' \beta)$.

Management Practices Measure

We examine the family businesses' efforts to reduce agency through a management strategies measure and a measure that indicates if the family business has developed procedures that hold managers formally accountable for their responsibilities to the firm. The management strategies measure incorporates six responses to items related to the frequency with which the family business undertakes activities related to formal planning, formal human resource policies, and financials controls. These six items were adapted from the National Family Business Survey (Danes et al., 2007) and are shown in table 2. Using confirmatory factor analysis (CFA), we examine whether these measures exhibit acceptable fit for the context of our study. Despite exhibiting a significant chi-square statistic, results for other fit measures using Lisrel 8.80 indicate acceptable fit of a one-factor model for the management strategies variable (RMSEA = 0.048; CFI = 0.99; GFI = 0.99). These results, along with an internal reliability score above the acceptable threshold of 0.70 ($\alpha=0.73$), indicate that it is acceptable to examine these six variables as a single, summed latent management controls measure. Additionally, we examine the influence of formal accountability controls for managers via a binary measure indicating whether or not such practices are in place within the business. We expect that management strategies will have a positive association with both objective and subjective measures of success. As shown in table 2, we see few differences in management strategies between men and women.

Goals Measure

Economic goals are consistent with the tenets of agency theory. We examine whether individuals indicate their primary goal for the firm is primarily economic or non-economic in nature. Respondents were asked to indicate the most important goal to their family business, and were given the following options: profit, a positive reputation with customers, business survival, keeping the business in the family, and opportunity to work with family members. Profit, a positive reputation with customers, and business survival were categorized as economic goal while keeping the business in the family and the opportunity to work with family members were categorized as non-economic goals. Approximately 22% of men chose non-economic goals compared to 20% of women.

Control Variables

We controlled for business owner demographics including age, race, marital status, and educational attainment. We also controlled for business characteristics including business age, total employees, whether the spouse is an active day to day manager in the business (copreneur), and whether a successor had been identified.

Results

Six probit models were analyzed. The first set of models analyzed profit for women and men. The probit results and marginal effects are shown in table 3. The second set of models analyzed women's and men's perceptions of family business success. The results and marginal effects for these analyses are shown in table 4. The third set of models analyzed the full sample of both female-controlled and male-controlled family businesses to determine the association of gender with performance. The results and marginal effects for the third set of models are shown in table 5.

Management Controls

In exploring Hypothesis 1, we first examine the relationship of management control implementation with objective and subjective performance. Both profitability models for men and women indicate that management control implementation and instituting formal measures to evaluate managers were statistically significant. For women respondents both management control implementation ($\beta = 0.04$, $\rho = 0.05$) and incorporating procedures to hold managers formally accountable ($\beta = 0.04$, $\rho = 0.05$) were positive and significant; thus, these management practices improve female-controlled businesses' profitability. A one point increase in the management practices measure increases the probability of having profit greater than \$50,000 by 1.6%. If women have a policy to hold managers accountable for actions, then the probability that they will have a profit greater than \$50,000 is improved by 18.5% compared to those that have no such policy. For male respondents, both measures of management practices exhibiting positive and significant effects (management control implementation: $\beta = 0.028$, $\rho = 0.10$; manager evaluation: $\beta = 0.466$, $\rho = 0.01$). This indicates that a one point increase in management practices increases the probability of having high profit by 0.7%, while implementing accountability policies for managers increases the probability of high profit by 11% versus those that do not. Given these results, we find full support for Hypothesis 1 that implementation of management controls and formal evaluation procedures for managers increase the likelihood of high profitability.

Hypothesis 2 examined the relationship of these same management practices measures for their role on subjective performance. Results for women respondents indicate that women do not appear to measure subjective performance based on implementation of management practices within the firm (management control implementation: $\beta = 0.030$, $\rho =$

ns; manager evaluation: $\beta = 0.147$, $\rho = ns$). Men's subjective performance, however, was positively and significantly improved by the implementation of management controls ($\beta = 0.061$, $\rho = 0.01$). Increasing the level of management practices increased the probability that men perceived their business as successful by 2.1%. Procedures to formally evaluate managers did not hold a significant effect on subjective performance for men ($\beta = -0.089$, $\rho = ns$). Based on these results, only partial support was determined for Hypothesis 2.

Goals

Hypotheses 3 and 4 examined the role of declaring non-economic versus economic centered goals as the primary goal of the firm. We examined non-economic oriented goals via our analyses. For women respondents, setting non-economic goals as the primary goal of the firm held a significant, negative effect ($\beta = -0.632$, $\rho = 0.05$) on the likelihood that they would report higher levels of profit; thus, since goal-setting is a binary measure, women who set primarily economic oriented goals for the firm are more likely to report higher levels of profit for the firm. In fact, non-economic goals decrease the probability of reporting high profit by 24.8% versus having a primarily economic goal for female-controlled firms. Men's profitability was not found to be influenced by the type of goal ($\beta = -0.018$, $\rho = ns$) dictating the firm's strategy. Additionally, the primary goal of the respondent was not found to influence women ($\beta = -0.025$, $\rho = ns$) nor men ($\beta = 0.023$, $\rho = ns$) in their subjective assessments of business success. Given these results, only partial support was found for Hypothesis 3 and no support was found for Hypothesis 4.

Gender Differences in Performance

Hypotheses 5 and 6 explored the role of gender on profitability and perceptions of business success. We hypothesized that although women would report lower objective performance

than males, women would report higher subjective performance. Our results indicate that performance for male and female-controlled family businesses does not differ by gender ($\beta = 0.099, \rho = ns$).

In the full sample model, we interact the gender variable with each of the independent variables to determine if there is an interaction effect. Our results indicate that there is an interaction effect of gender on the relationship between economic goals and both objective ($\beta = -0.511, \rho = 0.10$) and subjective performance ($\beta = -0.193, \rho = 0.10$). These results indicate that when non-economic goals are stipulated as the primary goal of the firm, then women report lower levels of profitability than men. The same pattern holds for perceived success. In the subsequent sections we evaluate the influence of the controlling variables on profitability and perceived business success.

Control Variables in Profit Model

Several controlling variables held a significant relationship with the probability that both female and male-controlled family businesses report higher profitability. The age of the business and the number of employees were positive and statistically significant at the 1% level for female-owned businesses. A one year increase in business age increases the probability of reporting high profit by 1.3%, while increasing the number of employees by one improves the probability of having high profit by 2%.

Interestingly, the profit model for men was slightly different than that for women. In the male model, respondent's age was statistically significant and positively associated with high profit; although, there are diminishing returns to age. Business age and number of employees were also positive and statistically significant at the 1% level. Increasing age and number of employees increases that probability of having high income by 0.3% and 2.6%,

respectively. In contrast to the female model in which having a successor was not statistically significant, males reporting having named a successor exhibits a positive and statistically significant effect at the 5% level. Male owners who have identified a successor improves the probability for high profit by 10.2% versus male owners that have not identified a successor.

Control Variables in Perception of Success Model

Perception of success is a subjective measure of family business success. In the model analyzing female owners' perceptions of family business success, being married was negative and statistically significant at the 10% level. The probability that married women thought their family business was very successful decreased by 25.2% versus single women. However, number of employees was positive and statistically significant at the 1% level. Increasing the number of employees improved the probability of perceiving the business as successful by 1.9%. Number of employees was also positive and statistically significant at the 1% level for men. Increasing the number of employees increased the probability that men perceived their business as successful by 0.2%. Having chosen a successor was positive and statistically significant at the 5% level for men. Male owners who had chosen a successor have a 14% increased probability of perceiving their business as successful versus those who had not chosen a successor.

Control Variables in Full Sample Models for Profit and Perceived Success

In the full sample models age of the owner was statistically significant in the profit model and showed diminishing returns to age. Business age and total employees were positive and statistically significant in both models. Increasing the age of the business and the number of employees increases the probability of objective and subjective success. Identifying a successor was also positive and statistically significant in both models. Business owners who

have identified a successor have a 14% and 13% higher probability of reporting high profit and high perceived success than those who had not identified a successor.

Discussion

Prior research indicates that family businesses have fewer management controls in place (Chrisman et al., 2010) and are more likely to have non-economic goals for their firm (Chrisman et al., 2012). Founded in agency theory, we analyze the performance effects of management controls and goals for the business across both male and female-controlled farm and rural family businesses. Our research is among the first attempts to determine if these factors influence objective and subjective performance differently across male and female-controlled farm and rural family businesses.

The results from our sample indicate that female-controlled farm and rural family businesses do not underperform their male counterparts in terms of objective or subjective assessments of performance. This is an important finding, given the mixed results across the family business literature regarding the impacts of gender on performance. Our results do indicate, however, that management controls and strategies and goals for the firm influence objective and subjective performance differently across male and female-controlled farm and rural family businesses.

Objective performance for female-controlled family businesses is positively influenced by the implementation of management controls and strategies and setting specific guidelines for monitoring managers. While men are also influenced by the incorporation of management controls and strategies and specific guidelines for monitoring measures, men see greater increases in the probability of higher profits by monitoring managers. Women, however, see increases in the probability of higher profits than men by incorporating management controls

and checks across the business. Interestingly, more established businesses with a larger number of employees also improves the probability of higher profit levels for both male and female-controlled farm and rural family businesses. Although men see no significant influence on profits from choosing non-economic goals, women see a decline in the probability of higher profits when non-economic goals are considered the focus of the firm. This result is confirmed by the interaction effects presented in the full sample model. Thus, goals appear to be more important in determining profits in female-controlled family businesses than male-controlled family businesses. For men, having identified a successor significantly increased the probability of higher profit levels; however, no successor effect was found for female-controlled businesses. Kimhi, et al. (1995) suggested that the presence of a successor motivated the family business owner to invest in the business and increase income and it seems that based on our results this is more prevalent in male-controlled businesses than female-controlled businesses.

Our model was much less helpful in identifying factors that influence the probability that the business is perceived as successful by the owner. Female-controlled businesses were more likely to be viewed as successful if the firm is larger (i.e., greater number of employees) and was less likely to be viewed as successful if the owner was married. The negative relationship between marriage and perceived success is a particularly interesting result, as a spouse is often seen as a boost to male-operator morale (Astone et al. 2010; Song 2007). However, research has shown that women may suffer from a marriage and motherhood income penalty (Marshall and Flaig 2013; Bianchi et al., 2000, Mattingly and Bianchi, 2003); and, indeed in this instance perhaps the work-life demands are greater for married female operators, leading them to feel less able to meet the many demands of both

the home and the business. Men were more likely to indicate satisfaction with business performance if the business is larger, management controls and strategies are in place, and if a successor has been identified.

Recent research in agricultural economics indicated that both farm and rural women business owners found gaining access to information about management “best practices,” a major challenge to success (Albright, 2006). Given that management controls and strategies and monitoring of managers is associated with higher performance in female-controlled farm and rural family businesses, yet does not influence subjective performance assessment, our research likely holds important implications for women business owners in rural communities. Our management controls measure consists of monitoring of marketing, costs and expenses, financial records, employees, job responsibilities, and goals. Given the importance of this measure as a single factor, it appears that women business owners in rural communities need assistance in planning for the implementation of such practices, as well as monitoring their effectiveness. Further, to our knowledge, comparable research is not available for farm and rural men-controlled businesses; thus, this is an important first step in identifying important gender-specific policies and procedures that may affect performance. Further research is needed in this area, both to examine our results in different contexts and to see if family and nonfamily farm and rural businesses differ with regards to these same aspects.

Conclusions

Our analysis of the economic and subjective performance of 576 male and female-controlled family farm and rural businesses in the US yields important results and implications for both academics and practitioners. We find that management strategies and controls and

monitoring of managers are key predictors of profitability for both male and female-controlled farm and rural family businesses. By investing in higher levels of monitoring and control, both male and female-controlled family firms may see improvements in profitability.

Our results underscore the importance of goals for women, and the detrimental effect that non-economic goals have on female-controlled family business profitability. However, non-economic versus economic goals did not influence subjective performance for female-controlled farm and rural family businesses; thus, this particular element seems to only effect the bottom line, not satisfaction with the business's performance. Also in line with goals, men appear to be motivated by having identified a successor, since this particular variable positively improves both profitability and being satisfied with the performance of the business. Thus, keeping the business in the family appears to be an important goal for men, although declaring profitability or other economic goals as the primary goal of the firm does not.

Our results provide three primary contributions to the agricultural economics and family business literatures. First, we determined that management controls and strategies, as well as the monitoring of managers are of significance to the objective performance (i.e., profitability) of both men and women-controlled farm and rural family businesses. Second we found that communicating economic versus non-economic goals does not influence satisfaction with the firm's performance, but does influence the profitability of female-controlled family businesses. Thus, ensuring that women understand the influence of goals on firm outcomes is important to the tangible success of female-controlled farm and rural family businesses. Finally, we find that when we compare male and female-controlled

businesses in the same industry, while controlling for family and business factors, men and women do not differ in a statistical sense in objective or subjective performance.

Additionally, since agency theory argues that family businesses may have a competitive advantage in reducing agency costs, our study paves the way for future researchers in agricultural economics to examine this phenomenon in different contexts. Future research would also benefit from a greater understanding of the relative importance of monitoring and control mechanisms. For example, practically farm and rural business owners would benefit from knowing which monitoring and control mechanisms provide the most “bang for their buck;” thus allocating their scarce human resources to the best use.

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Table 1. Descriptive Statistics

		Women (n=224)	Men (352)
Variable	Definition	Percent	Percent
Profit	1=Profit >\$50,000	51.79	59.66
Success	1=Family business is very successful	29.46	30.68
College	1=BS or higher	85.27	75.28
Rother	1=Nonwhite	3.13	4.26
Married	1= Married	88.84	88.64
Copreneur	1=Spouse active in business	74.11	59.94
Mgmt Acct	1= Has procedures to hold individuals accountable	29.91	38.07
Non Econ Goal	1=Primary business goal is not economic	20.09	22.16
Successor	1= Identified a successor	27.23	28.13
		Mean (Std Dev)	Mean (Std Dev)
Age	Age of respondent	53.47 (11.17)	55.56 (12.99)
Bus Age	Age of business	20.12 (20.53)	27.82 (25.96)
Total Employees	Number of total employees	7.00 (11.87)	12.03 (36.70)
Management	Index of management practices range is 6 to 30 (see Table 2)	17.51 (4.98)	17.56 (4.87)

Source: 2010 Intergenerational Farm and Non-Farm Family Business Survey

Table 2. Management Strategies

Management Controls Included in Management Index	Women (N=224)	Men (N=352)
	Mean (Std Dv)	Mean (Std Dev)
How often do you plan marketing strategies?	3.34 (1.22)	3.38 (1.22)
How often do you estimate costs and expenses?	3.32 (1.14)	3.42 (1.17)
How often do you prepare or have prepared financial records such as cash flow statements?	2.81 (1.15)	2.84 (1.15)
How often do you evaluate employee performance?	2.82 (1.55)	2.99 (1.54)
How often do you set goals for the business?	2.91 (1.14)	2.80 (1.19)
How often do you review position descriptions and job responsibilities?	2.31 (1.26)	2.23(1.24)
Management Accountability	Percent	Percent
Have you developed procedures that hold individuals accountable for management responsibilities?	Yes = 29.91 No = 70.09	Yes= 38.07 No = 61.93

Note: Items are on a Likert Scale where 1=Never, 2=Yearly, 3=Quarterly, 4=Monthly, and

5 =Weekly. Source: 2010 Intergenerational Farm and Non-Farm Family Business Survey

Table 3. Probit Model for Profit

Variable	Women			Men		
	Estimate	Standard Error	Marginal Effects	Estimate	Standard Error	Marginal Effects
Age	0.733	0.061	0.029	0.096**	0.039	0.024
Age ²	-0.001	0.001	-0.000	-0.001***	0.000	-0.000
College	-0.346	0.285	-0.132	-0.128	0.189	-0.031
Rother	-0.758	0.594	-0.2901	-0.276	0.364	-0.077
Married	-0.580	0.391	-0.212	-0.220	0.272	-0.050
Copreneur	0.195	0.256	0.077	-0.023	0.176	-0.006
Bus Age	0.032***	0.008	0.013	0.013***	0.004	0.003
Total Employees	0.051***	0.145	0.020	0.104***	0.021	0.026
Management	0.041**	0.021	0.016	0.028*	0.017	0.007
Mngmt Acct	0.484**	0.228	0.185	0.466***	0.175	0.110
Non Econ Goal	-0.632**	0.251	-0.248	-0.018	0.194	-0.004
Successor	0.142	0.225	0.055	0.455**	0.193	0.102
Constant	-2.800*	1.622		-3.335***	10.081	
Log Likelihood	-119.643			-174.678		
Pseudo R ²	0.229			0.264		
N	224			352		

*, **, *** denote statistical significance at the .10, .05, and .01 levels, respectively. Source:

2010 Intergenerational Farm and Non-Farm Family Business Survey

Table 4. Probit Model for Perceived Business Success

Variable	Women			Men		
	Estimate	Standard Error	Marginal Effects	Estimate	Standard Error	Marginal Effects
Age	0.041	0.061	0.014	0.027	0.039	0.009
Age ²	-0.000	0.001	-0.000	-0.000	0.000	-0.000
College	-0.001	0.270	-0.000	-0.061	0.174	-0.021
Rother	0.482	0.525	0.180	-0.024	0.379	-0.008
Married	-0.671*	0.371	-0.252	0.221	0.277	0.072
Copreneur	0.142	0.512	0.047	0.230	0.167	0.078
Bus Age	0.006	0.005	0.002	0.005	0.003	0.002
Total Empl	0.055***	0.015	0.019	0.006**	0.003	0.002
Management	0.030	0.021	0.010	0.061***	0.017	0.021
Mngmt Acct	0.147	0.222	0.051	-0.089	0.161	-0.030
Non Econ Goal	-0.025	0.245	-0.008	0.023	0.182	0.008
Successor	0.282	0.219	0.099	0.393**	0.166	0.140
Constant	-2.466	1.609		-3.074***	1.074	
Log Likelihood	-116.948			-195.765		
Pseudo R ²	0.139			0.098		
N	224			352		

*, **, *** denote statistical significance at the .10, .05, and .01 levels, respectively. Source:

2010 Intergenerational Farm and Non-Farm Family Business Survey

Table 5. Probit models for profit and perceived success for male and female-controlled businesses

Variable	Profit			Perceived Success		
	Estimate	Standard Error	Marginal Effects	Estimate	Standard Error	Marginal Effects
Female	0.099	0.465	0.034	0.372	0.463	0.130
Age	0.079**	0.032	0.027	0.033	0.032	0.011
Age ²	-0.001**	0.000	-0.000	-0.000	0.000	-0.000
College	-0.221	0.154	-0.074	0.006	0.144	0.002
Rother	0.432	0.300	-0.162	0.051	0.301	0.018
Married	-0.350	0.218	-0.112	-0.125	0.210	-0.044
Copreneur	0.014	0.142	0.005	0.185	0.137	0.062
Bus Age	0.018***	0.003	0.006	0.006**	0.002	0.002
Total Empl	0.072***	0.012	0.025	0.010***	0.003	0.003
Management	0.034**	0.017	0.012	0.063***	0.017	0.021
Mngmt Acct	0.472***	0.172	0.157	-0.117	0.161	-0.040
Non Econ Goal	-0.025	0.188	-0.009	0.070	0.179	0.024
F*Management	-0.004	0.026	-0.001	-0.024	0.026	-0.008
F*Mngmt Acct	-0.018	0.277	0.006	0.287	0.263	0.103
F*Non Econ Goal	-0.511*	0.296	-0.193	-0.193*	0.117	-0.014
Successor	0.345**	0.142	0.115	0.323**	0.130	0.114
Constant	-2.839***	0.888		-3.002***		
Log Likelihood	-302.758			-322.52		
Pseudo R ²	0.23			0.09		
N	576			576		

F* denotes interaction term such as Female*Management, Female* Management

Accountability, and Female*Non-Economic Goal. *, **, *** denote statistical significance at the .10, .05, and .01 levels, respectively. Source: 2010 Intergenerational Farm and Non-Farm Family Business Survey