

**ENTREPRENEURIAL PROCLIVITY
INCREASES GROWERS PERCEIVED
PERFORMANCE**

*An exploratory study to
explain the positive
relationship between
Entrepreneurial Proclivity
and growers Perceived
Performance*

Bachelor Thesis Upgrade

YSS-82312

An exploratory study to explain the positive relationship between
Entrepreneurial Proclivity and growers Perceived Performance

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880730-624-020

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21th of June 2012

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Abstract

A positive relation between entrepreneurial proclivity and performance of firms has been found in several research studies, but the mediating factors of this relationship remain ambiguous. Therefore this study aims to investigate when there is a positive relation between entrepreneurial proclivity and performance. The model that is developed to test this relationship includes the family firm life cycle and possible business strategies that a horticultural grower pursues. Firstly the results show that entrepreneurial proclivity in horticulture is positively related to perceived performance. Secondly the results show that age and succession (family firm life cycle) influences the level of entrepreneurial proclivity. Thirdly strategy has a (mediating) effect on the entrepreneurial proclivity – perceived performance relationship. Fourthly strategy influences the perceived performance of growers. These results confirm that entrepreneurial proclivity positively influences perceived performance. This research adds that the stage of the family firm life cycle influences the level of entrepreneurial proclivity and that strategy has an influence on perceived performance.

Key words: Entrepreneurial proclivity, perceived performance, Family Firm Life Cycle, Horticulture, Growers, Farmers

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1. Introduction

1.1 Background

Farmers are advised to be entrepreneurial, because Entrepreneurial Proclivity (EP) positively influences performance (Olsson 1988; Bergevoet, Ondersteijn et al. 2004; Knudson, Wysocki et al. 2004; Phillipson, Gorton et al. 2004; Pyysiäinen, Anderson et al. 2006; Clark 2009; Morgan, Marsden et al. 2010). This view on the influence of EP on performance originates from research in small, medium-sized and large firms (Zahra and Covin 1995; Slater and Narver 2000; Lumpkin and Dess 2001; Matsuno, Mentzer et al. 2002; Wiklund and Shepherd 2005; Madsen 2007; Rauch, Wiklund et al. 2009).

The reasons for this positive EP – perceived performance relationship are not entirely clear. This creates the need for more empirical research on mediating factors for the EP – performance relationship (Lumpkin and Dess 2001; Rauch, Wiklund et al. 2009; Verhees, Kuipers et al. 2011). Firstly an important possible mediator of this relationship is strategy, since the choice of a specific strategy might influence the performance of a farm (Verhees, Lans et al. 2011). Secondly agriculture is dominated by family firms (Ahearn, Poppe et al. 2009), consequently the Family Firm Life Cycle (FFLC) is expected to have a significant influence on EP and performance.

1.2 Research Objective

This study aims to investigate why there is a positive relation between EP and performance.

The central question is;

What does an entrepreneurial grower do differently than a less entrepreneurial grower?

This relationship is studied from the context of horticultural growers in the Netherlands by means of empirical research.

1.3 Research Questions

Research questions developed to support the central question are;

- What does EP entail?
- How does EP influence perceived performance?
- What strategies does an entrepreneurial grower tend to follow?
- What strategies are positively related to perceived performance?
- Does the FFLC influence the EP of a grower?
- Does the stage in the FFLC influence the strategies that the grower pursues?

1.4 Definitions

For this study EP has been defined as the set of skills and qualities that an entrepreneur possesses that enable the entrepreneur to be innovative, pro-active, willing to take risks and to be market oriented. It is about consciously choosing the direction of, setting goals for and implementation of strategies within the business.

Horticultural growers in this research are those who are involved in the practice of growing cucumbers, tomatoes, paprika or other greenhouse vegetables. Growers are not subject to production, market or price regulations and are therefore more comparable to other small and medium sized companies than other agricultural firms (Bremmer 2004).

1.5 Outline

The second chapter of this paper (literature review) provides an interpretation and synthesis of research on EP, FFLC, strategies and perceived performance. The third chapter displays a conceptual model. The model shows the expected relationships between the above mentioned concepts. The fourth chapter outlines the methods used to test the conceptual model. The fifth chapter provides the results. The sixth chapter concludes on the results, proposes a restructured model and gives suggestions for further research.

2. Literature review

2.1 Entrepreneurial Proclivity

EP can be defined as the set of skills and qualities that an entrepreneur possesses that enables the entrepreneur to be innovative, pro-active and willing to take risks. It is about consciously choosing the direction of, setting goals for and implementation of strategies within the business (Covin and Slevin 1990; Schilden and Verhaar 2000; Lauwere, Verhaar et al. 2002; Matsuno, Mentzer et al. 2002; Sadler-Smith, Hamson et al. 2003; Wiklund and Shepherd 2005; Griffith, Noble et al. 2006; Pyysiäinen, Anderson et al. 2006; Verhees, Kuipers et al. 2011). Innovativeness in this context means adopting new methods or original ideas which requires the entrepreneur to be creative in thinking. Pro-activeness in this context means creating or controlling a situation rather than just responding to it. The willingness to take risks shows itself in the willingness to use resources, with a reasonable chance of a loss.

These EP characteristics allow growers to renew their business by offering an alternative and potentially superior customer value proposition, which positively influences firm performance (Matsuno, Mentzer et al. 2002; Verhees, Lans et al. 2011). In order for companies to obtain this superior value for its customers, it has to create a sustainable competitive advantage (Narver and Slater 1990). To create sustainable competitive advantage firms need to adapt the organizational culture to one that focuses on future customer needs. In other words, for firms to get a superior customer value proposition, a firm has to be market oriented.

Market orientation consists of three orientations; customer-, competitor- and inter-functional orientation. Customer orientation implies customer-oriented thinking to create superior value for customers. Competitor orientation consists of making use of market analysis in order to stay ahead of competitors. Inter-functional coordination means the imbedding of the marketing concept throughout the organization (Slater and Narver 2000; Noble, Sinha et al. 2002; Kyriakopoulos and Moorman 2004). These orientations make firms more focussed on opportunities in their surroundings that might improve the value for their customers and this makes these firms more market oriented.

Research has shown that entrepreneurial proclivity has a positive and direct relation with market orientation (Matsuno, Mentzer et al. 2002; Kyriakopoulos and Moorman 2004; Rauch, Wiklund et al. 2009). Entrepreneurial proclivity is an antecedent for market orientation, which means that EP cannot be seen as a sole skill but it requires the entrepreneur to also focus on his surroundings (Matsuno, Mentzer et al. 2002). This makes market orientation an essential property for entrepreneurs in order to obtain superior performance. Therefore in this study market orientation is seen as part of EP next to innovativeness, pro-activeness and willingness to take risks.

In small firms market orientation is often a characteristic of the firm owner. Because in small firms there are no resources to hire a marketing specialist. However this does not need to be a restriction for small firms to obtain superior firm performance. Decision making within small firms is non-bureaucratic and therefore a small firm owner can easily oversee the whole production and marketing processes within the firm (Verhees and Meulenberg 2004; Casillas and Moreno 2010). In agriculture farmers are seen as craftsman who care about the product from growing to selling the product. 'Formerly it was possible to manage and control a farm with a mixture of experience and common

sense' (Bergeroet, Giesen et al. 2005). In the rapid changing environment of today this is not possible any more. Next to experience and common sense a farmer needs to possess the skill to be market oriented.

Deciding which opportunities to pursue and how to exploit them are defining features of entrepreneurship (Shane and Venkataraman 2000). This relates to the view that entrepreneurs can be "made" as long as they possess a little bit of "entrepreneurial DNA", meaning that growers need to have a feeling for entrepreneurial farming (taking risks, be innovative, pro-active and market oriented) (Knudson, Wysocki et al. 2004). Entrepreneurship is a skill related property instead of a personality trait (Grégoire, Noël et al. 2006). Research shows that entrepreneurial experience is significantly correlated with performance of firms, which indicates that experienced entrepreneurs are effective managers of their firms (Forbes 2005). This means that next to having a feeling for entrepreneurial farming a farmer can acquire entrepreneurial skills and experience which will increase firm performance.

2.2 Family Firm Life Cycle

Within agriculture the majority of firms are small, family owned firms, where 60% of the labour force consist of family members and only 40% non-family labour force (Goncharova, Oskam et al. 2008; Ahearn, Poppe et al. 2009; Coyette and Schenk 2010). Because small firm owners often take all the decisions about their firms current and future direction, the entrepreneur plays an essential role in the relationship between EP and performance. Since EP is a skill, experience might influence this relationship. Therefore the stage in which a grower is in the Family Firm Life Cycle (FFLC) might influence the level of EP of growers.

The FFLC has four stages; entry, growth, consolidation and exit. In the entry stage of a family firm the entrepreneur will search for opportunities in the market and determine which markets to enter. From research performed within Dutch horticulture it seems that entrepreneurs in the entry stage are on average 32 years old (Bremmer 2004). The next stage is the growth stage in which the entrepreneur attempts to expand the business in order to guarantee survival. Growers enter the growth phase shortly after the entry phase, their age is 34 on average. After the growth phase comes a phase in which emphasis of the entrepreneur might shift from expansion to consolidation of gains, reduction of costs and the stabilization of income. The consolidation phase starts when the farmer is aged 40 years. The last phase is the exit phase. In this phase the entrepreneur starts thinking of retirement or succession, this starts around the age of 50 (Boehlje 1992; Bremmer 2004).

The life cycle of the horticultural grower parallels the life cycle of the family firm. The stages of the FFLC influence the level of EP and the strategies that a grower pursues and therefore has a significant (indirect) influence on the performance of firms (Covin and Slevin 1990; Lumpkin and Dess 2001; Bremmer 2004; Casillas and Moreno 2010; Lumpkin, Brigham et al. 2010).

2.3 Strategies

As can be concluded from the above literature, strategies pursued by growers are influenced by the FFLC stage and the level of EP of a farmer (Boehlje 1973; Boehlje 1992; Bremmer 2004). Literature on which strategies are pursued by horticultural growers is scant.

Growers in the **entry/growth phase** (30-40 years old, succession n/a) invest in order to increase their level of income. This is often done by increasing scale of the farm (LaDue, Miller et al. 1991; Gale 1994; Lauwere 2005). Cooperation with buyers and supply chain integration are examples of strategies that growers typically start to pursue during the growth phase and not necessarily from the entry phase on (Bremmer 2004).

Growers in the **consolidation phase** (40-50 years old, succession) tend to produce efficiently and have and become increasingly sensitive for societal wishes. Corporate social responsibility (CSR) is defined as the integrated use of people, process, and technology to build and maintain long-term, profitable relationships with target customers (Torres Jr, Akridge et al. 2007). Their aim is to make the core farm business more profitable (Potter and Lobley 1996; Bremmer 2004).

As the age of growers increases the probability that they will invest in replacement or expansion of business decreases (LaDue, Miller et al. 1991). For growers in the **exit phase** (50 years old, succession or exit) it is therefore likely to choose relatively safe strategic options to decrease their debts in order to make succession or sale of the farm easier.

Although the above text suggests that strategies are very important for a farmer during his whole career, the scientific underpinning of the importance of strategies for growers is scant. This makes research on the influence of strategies on performance very important. Research by Boehlje, Gray et al. (2005) suggest that redefining a strategic choice, when the market is unstable, into a growth, divest, exit, pause or follow on strategy can positively influence performance. This can be obtained by creating an unique value proposition (Boehlje, Gray et al. 2005).

2.4 Perceived Performance

Performance can be viewed from multiple perspectives. The first perspective is a objective measurement of performance namely financial performance. Financial performance is objective since financial performance is not influenced by personal feelings or opinions but represents facts about the financial performance of a firm. The second perspective is a subjective measurement of performance namely the way an entrepreneur views his or her performance (perceived performance). Perceived performance is subjective since it entails the entrepreneur's personal feelings about the firm's performance compared to its competitors. The use of perceived performance measures are common measures of performance in research on entrepreneurship (Lauwere 2005; Wiklund and Shepherd 2005; Madsen 2007).

3. Model and hypotheses

3.1 Conceptual Model

Based upon the literature review a conceptual model is developed. The four concepts in the conceptual model are entrepreneurial proclivity (EP), the family firm life cycle (FFLC), strategy and perceived performance. Figure 1 shows the conceptual model that is proposed to test the relationship between the above mentioned concepts. The model applies to horticultural growers.

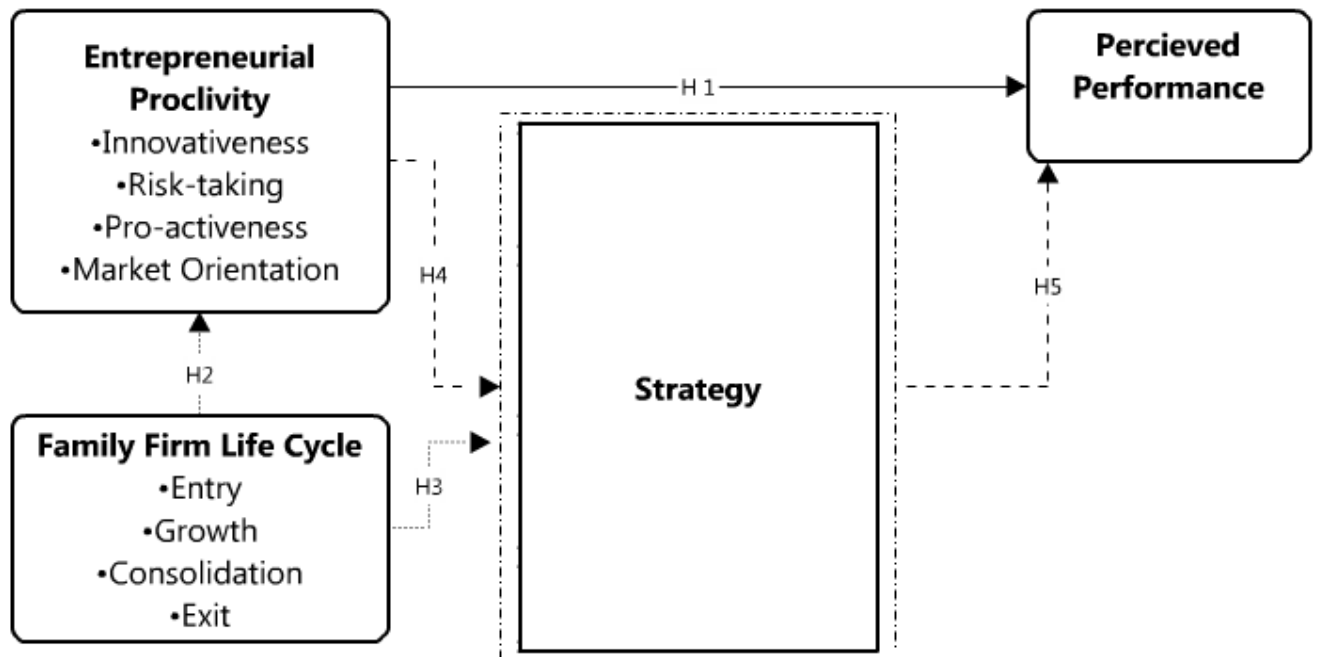


Figure 1. Conceptual EP-FFLC-Strategy-Performance model

EP in this model is entrepreneurial proclivity and consists of four factors. These underlying factors are innovativeness, risk taking, pro-activeness and market orientation. Literature shows that these factors together make the level of entrepreneurial proclivity of a grower (Matsuno, Mentzer et al. 2002; Kyriakopoulos and Moorman 2004; Rauch, Wiklund et al. 2009).

Next to EP the family firm life cycle relationship to the EP – perceived performance relationship is tested within this model. The FFLC consists of four stages. These stages are entry, growth, consolidation and exit.

The model shows strategy as a sole factor only, though within this research strategic clusters will be identified. Therefore the model will later on be adapted containing the strategic clusters that were found in this research.

Perceived performance is the performance as perceived by the grower in comparison to its competitors.

3.2 Hypotheses

The model shows that the level of EP influences perceived performance (H1). EP of growers is hypothesized to have a positive influence on farm performance. This relationship has been shown by several researchers in small businesses. Whether this relationship is significant for horticulture is not clear. Therefore the first hypothesis is;

Hypothesis 1: EP positively and directly influences perceived performance in horticulture

The model also shows that the stages in the FFLC might have a relationship with the level of EP of growers (H2). Because the stage in which a grower is in the FFLC influences the level of EP. Literature about this assumption is scant, the second hypothesis tests this assumption;

Hypothesis 2: The FFLC stages influence the level of EP

When the stage of the FFLC influences the level of EP of a grower. Then the FFLC might also influence the strategy that the grower pursues. Therefore this model assumes that the strategy that a grower pursues is related to the stages in the FFLC (H3). The third hypothesis tests this assumption.

Hypothesis 3: The FFLC stages influence which strategies an entrepreneur follows

The model shows that there is a relationship between EP and Strategy (H4). As the literature suggests strategy might be an important mediator of the EP – perceived performance relationship (Bremmer 2004; Boehlje, Gray et al. 2005). The fourth hypothesis tests whether EP influences the strategic choice.

Hypothesis 4: EP influences which strategy an entrepreneur pursues

The last hypothesis (H5 in the model) tests the assumption that the choice of a strategy has influence on perceived performance. On the one hand this is expected because when the grower would choose a strategy right and pursue this strategy than one might expect that this positively influences perceived performance. On the other hand a strategy that does not work out in a positive way might result in a negative relationship. Based upon literature we expect that this relationship is significant.

Hypothesis 5: Pursuing a specific strategy leads to better perceived performance.

4. Methods

4.1 Sample

The sample used for this research is a sample of Dutch horticultural growers. In total 63 companies from horticulture were used in this research. The sample originates from a larger sample of 1359 firms that were drawn from firms participating in the Dutch Farm Accountancy Data Network (FADN). The FADN network provides a representative sample of all Dutch growers and horticultural growers. The data originate from 2009.

The growers participating in the FADN network received a questionnaire, including an introductory letter to motivate them to complete the questionnaire. A return envelop was provided with postage and return address. In total 63 questionnaires were used for analysis. Several horticultural growers were asked to participate in this research. The sample consists of cucumber (19), paprika (13), tomato (16) and other (15) greenhouse vegetable companies.

4.2 Measures

All the concepts in the conceptual model for analysis are measured with this questionnaire. Appendix 1 gives the statements used for each measure. Respondents rated statement on a 7-point Likert scale ('not agree'(1) versus 'agree' (7)) and provided some general information on age and company size. For the concepts which were answered on a 7-point Likert scale, average scores are used in all measurements.

A description of the measurement properties is provided in Table 1. The measurement properties are assessed with principal component analysis (PCA) and reliability analysis (Cronbach's Alpha). The PCA of each measure should provide support for a one component solution. Indications for a one component solution are a scree plot with a sharp decrease in Eigenvalue from the first to the second component (point of inflexion) and a gradual decrease in Eigenvalues from the second component onwards; an Eigenvalue of the second component, which is smaller than 1, and a first component that accounts for a minimum of 50% of the variance in the items (Field 2009). Moreover, all items should have a loading on the first component (before rotation) higher than 0.6. Finally the reliability of the scale as indicated by Cronbach's Alpha should be higher than 0.6.

Some items in the measurement of innovativeness and risk taking were left out because there was an Eigenvalue above one. Within innovativeness questions asked were based upon a growers willingness to innovate. Questions that asked about whether a grower would stick to its old routines, did not fit with the other questions on innovativeness. Therefore these questions were left out of further measurements. Moreover, some risk taking questions were asked about whether a grower has the courage to take risk. Having 'courage' is a socially charged concept and therefore was left out of further measurements. When these items were left out of further analysis the Eigenvalue of the second component was below 1 and therefore acceptable.

Table. 1 Measurement properties

Scale	# of items	Eigenvalue second component	Variance accounted for	Lowest item loading	Chronbach's Alpha
Entrepreneurial proclivity	3	0.792	70%	0.645	0.776
• Innovativeness	6	0.632	70%	0.807	0.911
• Risk taking	6	0.818	64%	0.701	0.883
• Pro activeness	9	0.903	63%	0.664	0.926
Market Orientation	9	0.759	70%	0.734	0.947
Strategy (9x63)	27	0.360	79%	0.873	0.866
• Reduce costs	3	0.353	80%	0.876	0.870
• Increase scale	3	0.279	83%	0.903	0.900
• Increase quality	3	0.399	83%	0.860	0.888
• Increase price	3	0.508	75%	0.819	0.833
• Cooperate with buyers	3	0.444	79%	0.831	0.862
• Start new activities	3	0.226	88%	0.929	0.931
• Supply-chain integration	3	0.414	79%	0.852	0.860
• Decrease debts	3	0.544	70%	0.788	0.781
• Increase CSR	3	0.281	89%	0.904	0.920
Performance	5	0.568	76%	0.847	0.918

All other measures meet the criteria mentioned above and therefore all items are maintained in the measure. The factor analysis and reliability analysis have shown that all the constructs are measured correctly (lowest item loading all above 0.645, Chronbach's Alpha all above 0.776).

The next step was to analyse which strategic groups could be identified. Because strategies can correlate, an Oblimin rotation was used in principle component analysis. Increasing quality had a factor loading with two strategic dimensions therefore this strategy was left out of further analysis. Appendix 2 shows the structure matrix. Based upon this analysis, four strategic dimensions (factor structures) were identified;

1. *Innovative-strategy*; Start new activities, Supply-chain integration.
2. *Cost-strategy*; Cost price reduction, Decrease debts, CSR.
3. *Value-strategy*; Increase price, Cooperate with buyers.
4. *Scale-strategy*; Increase scale.

Table 2 shows the measurement properties for these strategic dimensions.

Table. 2 Measurement properties strategic dimensions

Scale	# of items	Eigenvalue second component	Variance accounted for	Lowest item loading	Chronbach's Alpha
Innovative-strategy	2	0.248	88%	0.936	0.857
Cost-strategy	3	0.379	79%	0.861	0.867
Value-strategy	2	0.207	90%	0.947	0.883
Scale-strategy	1				

The strategic dimensions found above are analysed in Glimmix, this program can perform mixture clustering (concomitant finite-mixture model approach). This type of mixture clustering is used to uncover growers segments. Age, MO and EP are the concomitant variables in this analysis. For these analyses the standardized scores are used, by standardizing scores per respondent in the IBM SPSS program before running the Glimmix procedure. From the sample of 63 growers there were 7 missing values on age and strategies therefore the mixture clustering is performed upon 56 respondents.

To derive the number of growers segments, ten alternative models were analysed. Out of these ten models the model with the lowest consistent Akaike's Information Criterion (CAIC) value was selected. This value determines the best trade-off between model fit and parsimony. The concomitant variables Age, MO and EP were used. From this set of models the one with the lowest CAIC value is selected.

The segments from the Glimmix procedure were added to the respondents answers on the questionnaire. In this way the segments could be further analyzed. This is done by means of linear and multiple regression in the IBM SPSS Statistics program. The results of these analysis will be shown in the next chapter. The outcome of these procedures can be used to investigate the relationship between the FFLC and strategies and the level of EP. This is done by multiple linear regression and analysis of variance (ANOVA). The results are based upon unstandardized scores.

5. Results

From the mixture clustering procedure in Glimmix 5 segments of growers were found. These 5 segments were selected, whilst there the CAIC value was lowest. The results are analysed in terms of size of the segment, average age, EP score, and the coefficient estimates for every strategic dimension. Table 3 shows the results of the mixture clustering.

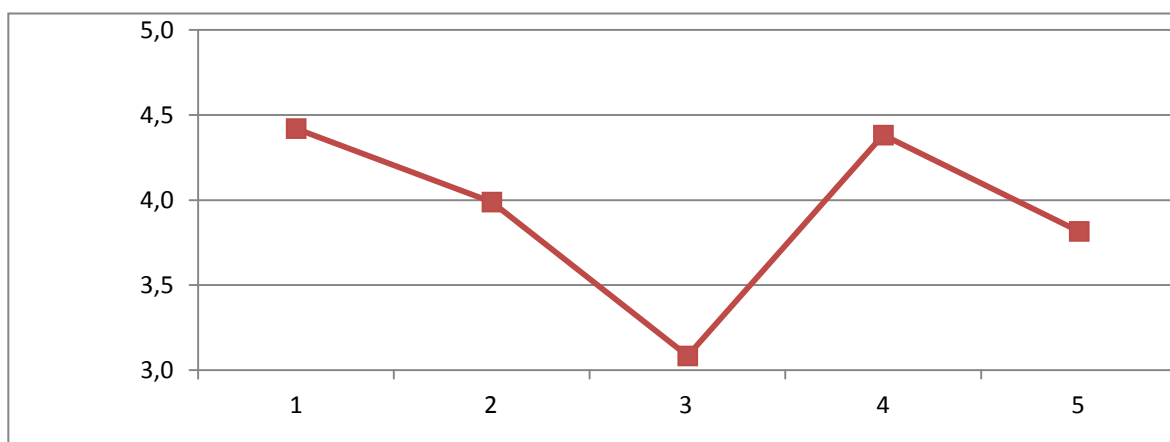
Table. 3 Mixture cluster analysis (Glimmix)

Segment #	Age	Size	Entrepreneurial Proclivity	Innovative Strategy	Scale Strategy	Cost strategy	Value Strategy
1	33 years	11%	4.419	-0.287	-0.354	0.102	-0.032
2	40 years	29%	3.987	-0.477	-0.363	0.085	0.169
3	47 years	18%	3.083	-0.581	-0.847	0.325	0.268
4	51 years	25%	4.381	-0.412	-0.851	0.321	-0.015
5	58 years	18%	3.815	-0.331	-0.780	0.123	0.185

As can be concluded from table 3 the growers who participated in this research do not prefer innovative and scale strategies. The preference for innovative strategies shows that the first and last segment (growers in their entry and exit phase) show the least negative preference towards innovative strategies. Younger growers (segments 1 and 2) are the least negative towards scale strategies. The elder growers (segments 3, 4 and 5) show very negative preference towards these scale strategies.

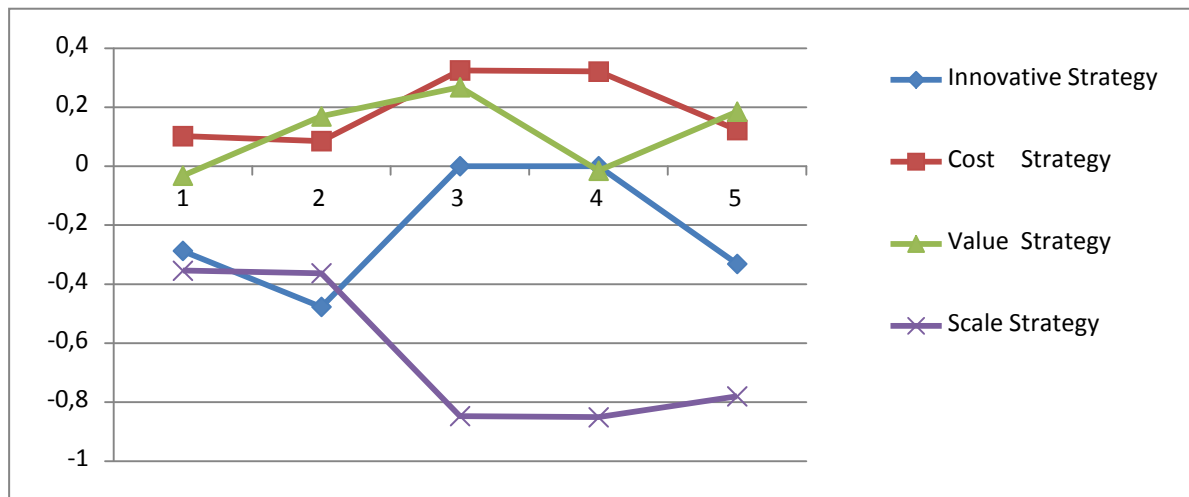
Looking at both cost and value strategies there are some differences in preference. Younger growers (segment 1) and growers aged 51 on average (segment 4) prefer cost strategies over value strategies. Segments 2 and 5 the middle aged and older growers prefer value strategies over cost strategies. Segment 3 prefers cost strategy most.

Next to the preference for specific strategy dimensions the level of EP was measured. Figure 2 and 3 give a graphic representation about the EP levels and strategic dimension preferences over the FFLC. The numbers on the x-axis indicate the growers segments from table 3 which are sorted by age. Figure 2 shows that the level of EP is highest when the growers are young (age 33) and decreases when succession or retirement comes in sight (age 47). This provides some preliminary support for hypothesis 2.



(Age group) averages; (1) 33, (2) 40, (3) 47, (4) 51, (5) 58

Figure 2. EP over FFLC



(Age group) averages; (1) 33, (2) 40, (3) 47, (4) 51, (5) 58

Figure 3. Strategy preference over FFLC

Figure 3 shows what strategies are preferred in which age segment. There is no clear differentiation of strategies over the segments. This indicates that there might not be a relation between the FFLC and strategies (H3). In order to confirm these hypotheses further statistical analysis on the FFLC and strategies needs to be performed.

In order to answer hypothesis 1 (EP positively and directly influences perceived performance in horticulture) linear regression is performed with perceived performance as the dependent variable and EP as independent variable. Results show that EP has a positive influence on the perceived performance of growers in horticulture (0.304, $p < 0.05$), see second and third column table 7. This confirms that EP positively and directly influences perceived performance in horticulture, as hypothesized (H1). Thus entrepreneurial growers are able to be more successful than less entrepreneurial growers.

Hypothesis 2 (The FFLC stages influence the level of EP) is tested by performing linear regression with EP as dependent variable and age, succession n/a and successor found as independent variables. Using only age as a predictor for the FFLC shows no significant effect on EP. When succession not applicable (succession n/a) and successor found are included in the model the predictability of the model increases (F change 3.518, $p < 0.05$), see table 4. Therefore FFLC is analysed based upon the age of the growers, when succession is not yet applicable to the grower (succession n/a) and when succession is found. The results as shown in table 4 show that age and succession n/a are significantly related with EP ($p < 0.05$). The coefficients for age and succession n/a are negative, this indicates that when growers age increases and succession comes in sight the level of EP is negatively influenced, this provides support for hypothesis 2 (The FFLC stages influence the level of EP).

Table 4 Influence of age, succession n/a and successor found on EP

	EP	P(one-tailed)	EP	P (one-tailed)
Age	-0.012	0.273	-0.064	0.015
Succession n/a			-0.977	0.028
Successor found			0.558	0.149
F change	0.369		3.518	

Since the FFLC stages influence the level of EP the FFLC might also influence the strategy that a grower pursues. The model assumes that the strategy that a grower pursues is related to the stages in the FFLC. The Glimmix procedure results however indicated that there might not be a relation between the stage of the FFLC and the preference for a certain strategic dimension of the grower. General linear modelling (GLM) confirms this preliminary assumption. In order to test hypothesis 3 (The FFLC stages influence which strategies an entrepreneur follows) GLM is applied. The independent variable is created on the basis of EP and the FFLC (age, succession n/a, successor found) the dependent variables are the strategic dimensions (Innovative-strategy, Cost-strategy, Value-strategy and Scale-strategy). Table 5 shows the outcomes of the general linear modelling procedure. Since Wilks' Lambda is high (0.870) and non significant the variables show no mutual influence on each other. This means that there is no significant difference between the groups and thus cannot describe the relation between FFLC and the strategic dimension preferred. Therefore hypothesis 3 cannot be supported. Looking at the strategic dimensions separately the results show that succession does have influence on the preference for scale strategy by entrepreneurial farmers (EP 1.767, $p < 0.05$).

Table. 5 GLM outcomes Wilks' Lambda and Test of Between Subject Effects

	<i>Wilks' Lambda</i>	<i>P</i>	<i>Wilks' Lambda</i>	<i>P</i>
Intercept	0.870	0.146		
Entrepreneurial proclivity			0.449	0.000
Innovative-strategy		0.275		0.000
Cost-strategy		0.050		0.000
Value-strategy		0.520		0.000
Scale-strategy		0.050		0.035

The GLM analysis can confirm hypothesis 4 (EP influences which strategy an entrepreneur pursues). Looking at entrepreneurial proclivity solely Wilks' lambda is significant and thus the underlying variables influence EP, see table 5 the last two columns ($p < 0.05$). Further regression analysis shows that innovative (0.776) and value strategies (0.669) are most preferred by entrepreneurial farmers and that cost (0.423) and scale (0.413) strategies are least preferred by entrepreneurial farmers when looking at EP only.

Table. 6 Regression outcomes EP on Strategies

	<i>EP</i>	<i>P</i>
Innovative-strategy	0.776	0.000
Cost-strategy	0.423	0.000
Value-strategy	0.669	0.000
Scale-strategy	0.413	0.035

In order to answer hypothesis 5 (Pursuing a specific strategy leads to better perceived performance) multiple linear regression is performed. Using only EP as a predictor for perceived performance had shown a significant effect but when the strategic dimensions are added the predictability increases (F change 7.924, $p < 0.013$ over 0.049 both < 0.05). The results do not indicate colinearity (VIF < 10 , Tol > 0.2).

Table 7 shows the results of the multiple linear regression of EP and the strategic dimensions on perceived performance.

Table. 7 Influence of EP and strategic dimensions on perceived performance

	<i>Performance</i>	<i>P</i>	<i>Performance</i>	<i>P</i>
EP	0.304	0.049	-0.514	0.013
Innovative-strategy			0.277	0.081
Scale-strategy			-0.038	0.371
Cost-strategy			0.545	0.001
Value-strategy			0.647	0.000
R²	0.050		0.419	
F Change	2.834		7.924	

The innovative and scale strategy dimensions are non significant ($p > 0.05$). The cost and value strategic dimensions show a significant positive influence on perceived performance ($p < 0.05$). From the above analysis can be concluded that the strategic dimensions together with EP explain the relationship between EP, the strategic dimensions and perceived performance ($F 7.924, p < 0.05$). The inclusion of strategy in the EP-Performance relationship as mediator, has a strong effect on the relationship the relation EP-performance stays significant, but the correlation turns from positive to negative. This shows that there is an strong effect of strategy on the EP – Performance relationship. Hypothesis 5 therefore can be supported.

6. Discussion and Conclusion

The conceptual model developed has been updated with the four strategic dimensions found in this research and shows which hypotheses are supported by a solid line. Figure 4 shows the updated model.

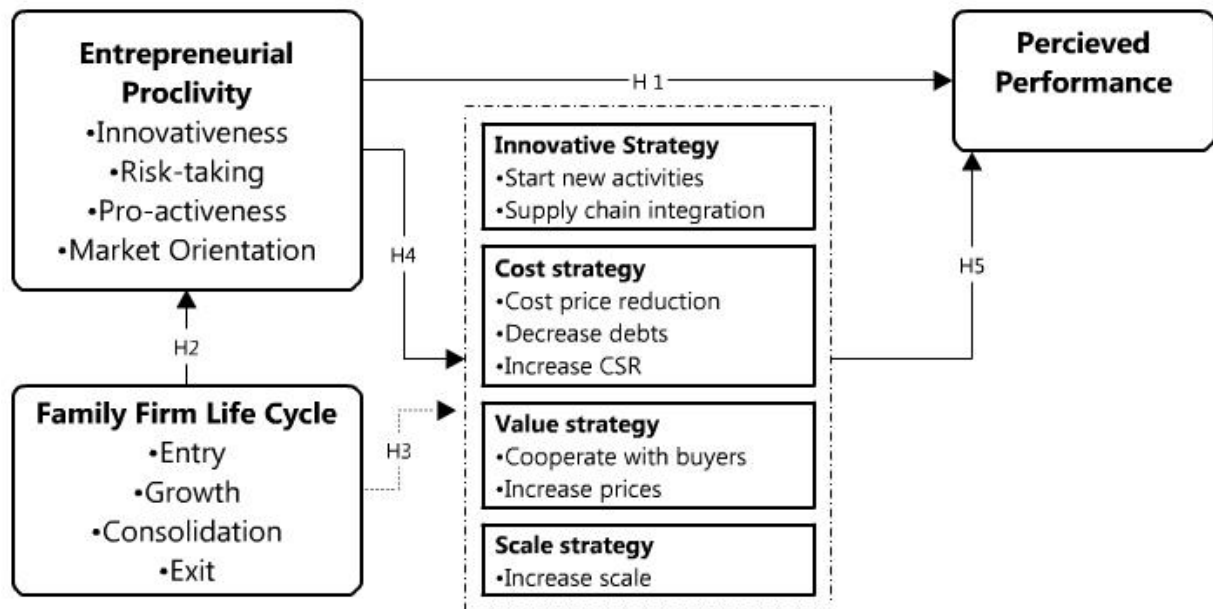


Figure 2. Adjusted model

EP has a positive influence on the perceived performance of growers (H1), this supports the advice for growers to be entrepreneurial. The level of EP is influenced by the stages of the FFLC with age and succession n/a as predictors (H2). Analyzing the level of EP over time shows that younger growers are more entrepreneurial than middle aged growers and that when succession comes to mind the level of EP goes up again. This probably is the case since either the grower wants to sell its company for a good price or wants to leave it to succession in a good way. Our results suggest that growers in horticulture should be innovative, willing to take risks, be proactive and be market oriented since this influences their perceived performance. We advise growers to stay entrepreneurial also in the growth and consolidation phase since this research shows that in these stages of the FFLC growers tend to get less entrepreneurial. It probably will have a positive influence on perceived performance to stay entrepreneurial. Literature shows that EP is a skill rather than a trait and therefore it should be possible to stay entrepreneurial throughout the whole growers career.

The FFLC has no significant relationship to the strategic dimension pursued by the grower (H3). This calls for further research that explores these relationships. The data used in this research were from 2009 which was a difficult year for horticultural growers this may have influenced these non significant results. Since it is not logical to pursue innovative or scale strategies in an economically difficult situation (lack of resources to innovate or to increase scale). Therefore we think that this had an influence on the significance of these strategic dimensions and for that reason we were not able to provide support for H3. A suggestion for further research would be to conduct the same

questionnaire again in horticulture but in a year which has been more economically stable for the growers. Interesting to notice is that scale strategy is significant positive when succession is in sight. This might be because when succession comes in sight growers would want to increase the scale of the operation to be able to leave a bigger farm to their successors.

EP influences which strategy an entrepreneur follows (H4) though the strategic dimensions need to be further analyzed in order to see what specific strategies are adopted by entrepreneurial farmers. The results of this research indicate that there is slight preference for innovative and value strategies and less preference for cost and scale strategies. Looking at the strategic dimensions in relation to performance two out of four strategic dimensions were not significant. Though the strategic dimensions do explain the EP – Performance relationship better when included in the research. This means that strategies do have an influence on the perceived performance of growers (H5).

The central question of this research entailed what an entrepreneurial grower does differently than a less entrepreneurial grower. Firstly, the answer to this question is related to the factors within EP and the FFLC. When growers are young and setting up their business they are high in levels of EP. These high levels of EP have a positive effect on perceived performance. During their years as grower they tend to lose that EP focus in the growth and consolidation phases. It is important that, since EP is a skill, growers keep on focusing on exploring possibilities with their company and do not stick to the work on itself, craftsmen as they are. This will prevent the situation when they only start to be entrepreneurial again when they either have to sell the farm or when succession comes to mind. Lastly the effect of strategy on the EP – Performance relationship has been shown significant. This implies that an entrepreneurial grower should consider carefully which strategy to pursue since this has influence on the performance of a grower.

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Appendices

Appendix 1 Questionnaire

Innovativeness

1. If I see opportunities, I am willing to start activities that are new to me
2. I look for opportunities to work on something new
3. If I see opportunities, I am good at starting activities that are new to me
4. I see opportunities to work on something new
5. If I see opportunities, I start activities that are new to me
6. I am always working on something new

Risk taking

1. If I see opportunities, I am willing to take great risks (with chances for very high profits)
2. If I see opportunities, I am good at taking great risks (with chances for very high profits)
3. I believe I have to take great financial risks to seize opportunities
4. I know how to take great financial risks to seize opportunities
5. If I see opportunities, I am starting to take great risks (with chances for very high profits)
6. I take great financial risks to seize opportunities

Proactiveness

1. I am willing to start activities that other firms do not do, yet
2. If I see opportunities, I like to respond before other firms do
3. If there are opportunities, I believe I have to be one of the first firms to use them
4. I am good at starting activities that other firms do not do, yet
5. If I see opportunities, I can respond before other firms do
6. If there are opportunities, I know how I can be one of the first firms to use them
7. I start activities that other firms do not do, yet
8. If I see opportunities, I respond before other firms do
9. If there are opportunities, I am one of the first firms to use them

Market Orientation

1. I regularly ask my customers whether they are satisfied
2. I regularly check whether my products correspond with what my customers want
3. I try to find out what my customers want in the future
4. I understand my customers' problems
5. I know what other customers than my current customers (i.e. potential customers) want
6. I know where and to whom my customers sell their products
7. I have information about the consumers of my products
8. I know how societal trends influence my firm
9. I regularly check whether it's better to sell my products to another customer than my current customer

Strategy

Cost reduction

1. I like to look for possibilities to reduce costs for my firm
2. I am good at reducing costs for my firm
3. I am more busy with reducing costs than colleagues are

Increase Scale

1. I like to look for possibilities to increase the scale of my firm
2. I am good at increasing the scale of my firm
3. I am more busy with increasing the scale of my firm than colleagues are

CSR

1. I like to look for possibilities to adapt my firm to the needs of society
2. I am good at adapting my firm to the needs of society
3. I am more busy with adapting my firm to the needs of society than colleagues are

*the rest of this questionnaire can be obtained by contacting F.J.H.M. Verhees

Appendix 2 IBM SPSS Structure Matrix on Strategies

	Structure Matrix			
	Component 1	2	3	4
Start new activities	0.430	0.321	-0.438	-0.929
Supply-chain integration	0.416	0.141	-0.516	-0.913
Cost price reduction	0.931	0.094	-0.300	-0.395
Decrease debts	0.897	-0.041	-0.489	-0.433
CSR	0.798	-0.086	-0.469	-0.667
Increase price	0.350	0.003	-0.957	-0.420
Cooperate with buyers	0.479	0.030	-0.920	-0.618
Increase sccale	0.342	0.841	-0.338	-0.553
<i>Increase Quality</i>	<i>0.672</i>	<i>-0.419</i>	<i>-0.625</i>	<i>-0.500</i>

Extraction Method: Principal Component Analysis.
Rotation Method: Oblimin with Kaiser Normalization.