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**The link between family orientation,  
strategy and innovation in Dutch  
SMEs: A longitudinal study**

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## **THE LINK BETWEEN FAMILY ORIENTATION, STRATEGY AND INNOVATION IN DUTCH SMES: A LONGITUDINAL STUDY**

### **ABSTRACT**

This study aimed at identifying some of the factors determining innovation performance in the SME. Based on a sample of 388 Dutch SMEs, hypotheses were tested in particular regarding the main effects of strategy, and the direct and indirect effects of family orientation on firm performance. The results clearly support a relationship between different components of strategy and strategic process and innovation performance, even on a longitudinal basis of up to four years. Variables positively predicting innovation performance include greater risk orientation, greater growth orientation, a focus strategy, and innovation differentiation strategy. More formal strategic process is also positively related to innovation performance. The only strategy negatively associated with innovation performance is price discounting. Family orientation has a statistically significant direct and indirect effect on innovation performance. However this accounts for only between 1 and 3% of variation, suggesting that there may be other mediating variables that might also explain differences between more and less family oriented SMEs, such as structure or other organization characteristics not measured in this study. Thus the conclusions should not be overstated. Indeed there is a small negative effect but probably much less than the dramatic differences sometimes presumed and stated in the nonempirical literature. Further research is needed to understand the further implications of these findings.

Keywords: innovation, small business strategy, family business dynamics

## **THE LINK BETWEEN FAMILY ORIENTATION, STRATEGY AND INNOVATION IN DUTCH SMES: A LONGITUDINAL STUDY**

### **1. Introduction**

Innovativeness is an important determinant of performance. Although empirical results of prior studies are somewhat mixed, a review of the literature by Capon, Farley, and Hoenig (1990) find that in over two-thirds of the studies, a positive relationship between production innovation strategy and firm performance exists, with more recent research confirming this finding for new technology ventures (Li and Atuahene-Gima, 2001). Cooper and Kleinschmidt (1995) identify strategy as one of the cornerstones of innovation, along with process and resources. More narrowly, Slater and Narver (1994) find that market orientation has a positive impact on new product development in large firms. However, much of the research suggests that links between innovation and performance, and in turn, determinants of innovation may be subject to various contingency effects (Li and Atuahene-Gima, 2001). For instance, previous research (Dekkers, 2003) suggests that family orientation may have an important influence on innovativeness. However, empirical research, especially research predicting innovation using longitudinal analyses, is fairly limited. This study is aimed to overcome that deficiency in extant research. The present study focuses on the relationship between strategy and innovation, controlling in particular for different aspects of organization context, including its ownership structure (family orientation), organization size, sector, and company age as well as direct effects of these context factors, especially family orientation, on innovation.

In spite of the unmistakable share of family firms in the economy, our understanding of their strategies, behavior and performance is still quite limited as are the differences between predominantly family owned and managed and other types of small and medium sized firms.

Past research, based on a dataset of Dutch SMES, by Dekkers (2003) reveals a small but statistically significant effect of family orientation on innovation, even when controlling for different aspects of organization context and strategy. Based on those results, family orientation appears to have both a direct and indirect effect, the indirect effect possibly due to different aspects of strategy. The drawback of that study however, was that innovation and family orientation were measured concurrently. This study aims at overcoming that shortcoming by examining lagged effects of both family orientation and strategy controlled for other context variables, on innovation performance.

Thus, the primary research question is as follows:

*What are effects (direct and indirect) of family orientation and of strategy on innovation performance in the SME?*

Strategy variables examined in this study include risk orientation, growth orientation, price discounting, innovation differentiation, and focus. Context variables include company size, company age, and sector (manufacturing, service or retail). Family orientation is a composite variable to be explained more fully in the body of the paper.

## **2. Definitions of key concepts as used in this study**

### **2.1. Innovation**

For a company to achieve or retain a good position in the market, it must at least consider improving products, services and processes on a regular basis. Innovation by nature, however, is a rather 'relative' concept (Bellon & Whittington, 1996). The classic Schumpeterian definition of innovation states that innovation is the successful introduction of a new product, a new process or a new organizational model. Innovation can also be defined as adoption of an idea or behavior – being a system, a program, a process, a policy, a device, a product or a service - that is new to the adopting organization (Daft, 1982; Damanpour & Evan, 1984).

One may also make a distinction between incremental innovations and radical innovations (e.g. Kenny, 2003). Incremental innovations refer to small but useful improvements. They usually entail refinements and extensions of established designs. Substantial price or functional benefits are typically required to define specific change as incremental innovations (Dosi, 1982; Henderson & Clark, 1992; Banbury and Mitchell, 1995). Incremental innovations are relevant: business survival depends on the ability to continuously deliver innovations. By being first with incremental innovations, firms can avoid erosion of competitive positions (Banbury & Mitchell, 1995). By contrast, radical innovations are the (incidental) 'life-changers' for the firm and industry. They represent complete and often irreversible change, in which eventually the whole business environment changes (Bellon & Whittington, 1996).

In this study, innovation performance refers to the actual completion of innovations: the introduction of new products and services in the market and/or the actual change of existing systems or processes that lead to them. To avoid possible confounding of the concepts of strategy and innovation, this study defines innovation performance thus as the end result rather than as the process of innovating and/or the strategic choice of creating innovative or new products or processes (the latter referred to in this paper as 'innovation differentiation.' This paper also treats innovation as a discreet occurrence, thus focusing more on the end result than the process. Though not measured in the present research, the innovation process is viewed as an important antecedent of the end result, and may be viewed as having several stages. More specifically, the concept of the innovation 'funnel,' proposed by Wheelright and Clark (1992), begins with the process of narrowing down a wide range of ideas (Idea-Generation Phase), followed by a screening process –formal or informal- that leads to further development and design of specifications (Concept Development Phase). This is followed, in

turn, by either explicit or implicit determination of the innovation's success (Forecasting phase), and finally the actual introduction of the innovation (Ottum, 1996).

## **2.2. Strategy**

Strategy, as used in this paper has a rather broad meaning, covering a range of concerns describing what the organization wants to do (Griffin & Ebert, 1996). The company's leadership may have explicit goals, objectives and targets that it expects to achieve. This directive is typically called the mission or strategy statement (Griffin & Ebert, 1996). In other firms, the direction is more informal. Especially among SMEs, many firms lack a formal strategic plan, written or otherwise. In this study, the formality of approach taken toward strategy is referred to as '*strategic process*.'

Regarding the nature of the strategy followed, three concepts are based on an interpretation of Porter's (1985) so-called generic competitive strategies. The first is '*price discounting*'. The firm offers goods or services at a lower price to improve and retain competitive advantage. This is somewhat narrowed in concept than Porter's cost leadership strategy (Porter, 1980, 1985). The second generic strategy is '*differentiation*'. The firm offers unique products or services for competitive advantage. The third strategy is '*focus*' on a specific market niche—a target group of customers, for instance, or certain distribution channels. In this study, exporting is considered an aspect of focus, since this implies a strategy targeting a specific market: i.e., customers in a country or countries outside the company's homebase.

Among SMEs, strategy is also influenced by a more general '*orientation*' of a business regarding its willingness to assume risk and desire to grow. Risk orientation is a concept that has been previously studied in the context of SME strategy (Verheul, Uhlaner and Thurik, 2005). The willingness to take risks or '*risk orientation*' captures the degree to which management is (or is not) averse to risking money and time in inherently uncertain situations. A second type of orientation is with respect to growth. The willingness to grow or '*growth*

*orientation*' captures the degree to which management puts priority on growing the firm. Many small firms that actually have growth opportunities are not willing to grow, and thus not interested in pursuing growth (Davidsson, 1989). These two types of orientations may have an influence on more specific strategies chosen by the director of the SME.

### **2.1.3. Family Orientation**

Defining family orientation is a complex task. Most complete definitions require a mix of criteria. The problem with many of the earlier definitions, with respect to research on SMEs, is that they are so encompassing that the vast majority of small firms can be classified as family firms. For instance, one of the earliest and still more broadly adopted structural definitions of family orientation was developed at the London Business School (Stoy Hayward, 1989). According to this definition, a firm is classified as a family business if **at least one** of the following three criteria is met:

- *more than 50% of shares are owned by one family;*
- *at least 50% of management are from one family; and/or*
- *a significant number of members of the board are from a single family.*

The problem however is that according to this definition, the vast majority of small firms are classified as family firms (Klein, 2000). For instance, in a recent study over 80% of Dutch SMEs might be classified as family firms (Hulshoff et al, 2001).

Due to such limitations, more recently developed definitions of family business reflect the acceptance of multiple dimensions as well as the notion that rather than creating a dichotomy, different firms may vary in the extent and manner in which family is involved with the firm. Thus, for instance, Astrachan et al (2002) propose the F-PEC scale composed of three dimensions, including *Power*, *Experience*, and *Culture*. The first dimension of the F-PEC, the Power dimension, is based on the extent to which the family owns, governs and participates in management and has its roots in several family business definitions (Stoy Hayward, 1989; Westhead et al, 2001; Klein, 2000; Martin & Suarez, 2001; Westhead & Cowling, 1996).



Experience is the second dimension of the F-PEC scale, and reflects the degree to which either ownership, governance or management have passed from one generation to the next (Donckels, 1998; Perricone et al., 2001; Cromie, et al., 1995; Cowling & Westhead, 1996; Flören & Göbbels, 1995; Flören, 1998). The third dimension reflects not so much structure or history of succession as it does the present influence of family on the firm's strategy and values, and derived from Carlock and Ward (2001). In a more recent study by Uhlaner (2005), a multifaceted approach is suggested which combines different dimensions into one scale, using Guttman scaling techniques. These multiple facets are referred together as family orientation (Uhlaner, 2005).

### **3. Past research linking the key variables in the model**

#### **3.1. Strategy and innovativeness**

As mentioned in the introduction, strategy has been identified as an important determinant of innovation, in both large and small firms (Cooper and Kleinschmidt, 1995; Brown, 1998). However, empirical research on small firms, especially of a longitudinal nature, is still relatively limited. Nevertheless, past research on Dutch SMEs provides empirical support for a positive relationship between innovation performance and various aspects of strategy, including risk orientation, growth orientation, focus and differentiation (Dekkers, 2003) and on the other hand a negative relationship between price discounting and innovation performance.

In linking strategy with innovation, scholars can be divided into two perspectives, those seeing strategy making as a deliberate process in which managers, often aided by consultants, customers and others, follow a conscious path of action. The other view is that strategy is an emergent understanding, evolving from the cumulative effect of individual operating decisions taken by management (Mintzberg and Waters, 1985). Either way, the two can be seen as linked. In the deliberate view, new products result from the execution of strategy.

From the emergent view, innovation is a tangible manifestation of what the strategy of a firm has been. Christensen (1999) suggests that the emergent or de facto strategy mirrors the strategy that its managers and stakeholders intend to pursue—its intended strategy, and requires alignment between the two.

### **3.2. Family orientation, strategy and innovation**

The notion that family orientation and strategy may be linked is consistent with the strategic choice paradigm (Child, 1972; Entrialgo, 2002). This paradigm postulates that key decision-makers have considerable control over an organization's future direction, and traced back even further to research by behavioral theorists (Cyert and March, 1963; March and Simon, 1958). However, previous research using this model generally tends to focus either on the personality of individual CEOs (e.g. Miller, Kets de Vries, and Toulouse, 1982) than the characteristics of multiple family owners. Nevertheless, the notion that managerial characteristics (in this case, their family orientation) may influence strategy is grounded in this theory.

Regarding the linkage between family orientation and innovation, other researchers posit a negative relationship between family orientation and innovation (Dekkers, 2003; Gudmundson et al., 1999; Donckels & Fröhlich, 1991; Flören & Wijers, 1996). Different possible explanations are given for this prediction, including possible differences in strategy, and less willingness to take risks with family wealth, especially in uncertain market conditions.

For instance, perhaps the emotional element that is linked to family commitment ('culture') may cause tension between business and family interests leading to decisions that are more risk-averse (Flören & Wijers, 1996; Donckels, 1998). However, in the limited empirical research to date, Daily and Dollinger (1993) find neither risk taking, nor new product introductions differ between more and less family-oriented firms. In fact, family firms were

found to be aggressive in protecting their market position. When controlling for size, age and sector, Dekkers (2003) also finds no effect of family orientation on risk orientation. Nevertheless, the view still lingers that family-oriented firms are more risk averse, and in turn, less innovative.

Past research also suggests that that in order to preserve their wealth, family firms are also more likely to follow less growth-oriented strategies than non-family firms (Donckels & Fröhlich, 1991; Gomez-Mejia, et al, 1987). As a result, there might be a slower growth path (Harris, et al., 1994), which is supported by recent research by Martin and Suarez (2001). They show that smaller size stems from less aggressive growth policies, due to so called “wealth effects”. In order to maintain control families do not raise the external capital needed to finance (optimal) growth.

Another explanation of differences in innovation is given by Flören and Wijers (1996) and Davis (1983), suggesting that family firms emphasize goals of long-term viability rather than short-term profits. These goals of long-term viability can be referred to as a priority of continuity (as opposed to profitability and growth), which, again, may be related to greater aversion to risk and strategic choices that limit radical change. However, these suggestions are not tested empirically.

In terms of competitive advantages, family businesses frequently have unique skills or knowledge, protected and kept in the family for generations (Flören & Wijers, 1996; Donckels, 1998). The sustainable competitive advantages determine the actual strategies followed by family businesses and the markets in which to operate (Gudmundson et al, 1999). Past literature also suggests that family firms are more likely to maintain a tradition of providing quality and value to the customer (value for money). This diminishes the likelihood that a differentiation strategy is followed. Less innovativeness may also be directed affected if

the family name and reputation are linked to a particular product and service (Hodgetts & Kuratko, 1982; Daily & Dollinger, 1993; Davis, 1983; Neubauer & Lank, 1998).

Not all writers predict a negative relationship however between family orientation and innovation. For instance, Carlock and Ward (2001) conclude that a family business is more likely to serve a niche market benefiting from the specific knowledge of the family, thus a focus strategy. This would also fit with the observation that family firms frequently focus on local and regional markets. One might further counterargue that family-oriented firms may be positively linked to innovation because they are typically found to rely to a lesser degree on the use of formal internal control systems. This may increase innovation, also through the employees' personal commitment and involvement to the company (Daily & Dollinger, 1993). Family-oriented firms typically stick to a combined function of owner and manager. In both first- and multi-generation firms, ownership and control will typically not be separated. Family control is maintained through proportional increases in family representation on the board of directors (Flören & Wijers, 1996; Cowling & Westhead, 1996c). When the owner-manager functions well, this should result in less agency conflicts, and this should benefit innovation (Westhead & Cowling, 1996b). The greater the functional integrity of the family system, the smaller the tension due to business issues will be. This smaller tension may result in more success in general, through responsiveness and focusedness (Danes et al., 1999). This may also concern innovation goals.

### **3.3. Family orientation and other context factors**

One of the limitations in past research is that family orientation is tested in bivariate tests, without controlling for other aspects of context. However, research suggests that other things being equal, family firms tend to be smaller in terms of total employees (US and UK, Coleman & Carsky, 1999; Cromie et al, 1995; Klein, 2000; Daily & Dollinger, 1993; Westhead and Cowling, 1996b). Thus it is unclear, without controlling for size, whether

family orientation has a direct effect on the tested variables or if it is only indirect by way of the size variable. Age is a similar variable, in that family firms tend to be older, controlling for other variables. In the US, family firms have been found to be less likely in the manufacturing industry (Cromie et al, 1995). In the UK, they have been found to be less active in services (Westhead & Cowling, 1996a). They may be expected to be over-represented in the retail and wholesale sectors. In this study, thus, to test for effects of family orientation, aspects of other context variables are first controlled for.

#### **4. Model and Hypotheses**

In this section, we present the model and hypotheses to be tested in our research. The model proposes that a) firm strategy has a direct effect on firm performance, controlling for various context variables, and that b) family orientation may have both a direct and indirect effect on innovation performance. (See Figure 1).

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 FIGURE 1 ABOUT HERE  
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More specifically, Hypothesis 1 predicts a direct effect of organization strategy on innovation performance (arrow 1 in figure 1). As explained in the previous section, whether by a deliberate or emergent process, the strategic choices made by management are expected to impact the degree of innovation in the firm. In particular, firms that are more risk oriented and growth oriented will seek out ways to create new markets by identifying new products or serves for their customers. Those firms with a conscious strategy of differentiation or focus will also more likely pursue activities resulting in new products and services. On the other hand, simple price discounting is a strategy least likely to require innovation, and can be achieved in other ways, including either economies of scale for larger SMEs, or by lowered

administrative costs and flexibility for smaller SMEs. To summarize, Hypothesis 1 can be stated as follows:

*H1: Companies following certain approaches to strategy (greater risk orientation, greater growth orientation, more formal strategic process, more focus, and innovation differentiation, and less emphasis on price discounting), are likely to report a greater level of innovation performance than those who do not.*

Previous literature suggests that less innovative than less family oriented firms. (Dekkers, 2003). One explanation for this is that there are differences in strategy: family oriented firms may place such goals as continuity or independence over and above growth, in order to preserve the family heritage. Also, a sort of conservatism (doing things the way father did it), may be an influence on the strategy of the firm, again, limiting the use of an strategy requiring new product development. However, past empirical research on large data sets, as well as longitudinal research in this area, is quite limited. Thus, in this study we propose to test the two alternative hypotheses (a direct effect of family orientation on innovation performance as well as an indirect effect) as stated in Hypotheses 2 and 3. Thus, Hypothesis 2 predicts a direct effect of family orientation on innovation performance (arrow 2 in figure 1), controlling for certain basic organization context variables such as size and sector.

*Hypothesis 2: More family-oriented firms, even when controlling for differences in strategy are likely to report fewer innovations than less family-oriented firms (direct effect).*

Alternatively, Hypothesis 3 predicts an indirect (negative) relationship between family orientation and innovation performance, controlled for different aspects of strategy (arrows 1 and 2, in combination). This hypothesis is consistent with a line of research on family firms carried out by Storey and colleagues, which found that the differences between family and nonfamily firms often reflect indirect effects based on other intervening factors such as firm size and sector (Westhead and Cowling, 1996). We state Hypothesis 3, as follows:

*Hypothesis 3: Family firms report less innovation due to differences in strategy followed by those firms.*

All three hypotheses are tested both controlling for organization context variables (company size, company age and sector) and without such controls.

## **5. Method**

### **5.1. Sample and data collection**

This study makes use of a subset of a sample tracked longitudinally by EIM Business Policy and Research since 1998. Companies must fit certain characteristics regarding size and sector. In addition, for this particular study, companies were only included where the listed business was a primary company rather than a subsidiary, and directorship had not been transferred in the past three years, (to eliminate those that had changed hands during the period of data collection). This resulted in an available sample of 338 firms. Data was collected via several rounds of telephone (computer-aided) interviews between 2001 and 2005 (time periods for different variables noted in Appendix 1). The sample covers manufacturing, wholesale and retail and services. The overall sample is also stratified according to size classes 0-9, 10-49 and 50-99 employees (in FTEs) although due to further selection criteria for this study, the sizes are not necessarily equally represented.

### **5.2. Measures**

The variables used in the study are listed in Appendix 1. Innovation performance is measured with a two-item self-report scale collected in 2005. All other measures are collected in previous time periods (see Appendix 1 for details). Independent variables include family orientation, different aspects of strategy, including risk orientation, price discounting, focus, innovation differentiation, growth orientation and strategic process. Control variables include company size, company age, and sector.

Factor analyses were carried out within broad categories (e.g. all the strategy variables) to assure their independence. Tests for multicollinearity, using VIF scores were carried out. In addition, even when VIF scores were within appropriate ranges, final strategy variables were selected that were least correlated with one another. Variables based on items with scales of the same length were created by taking the mean of different items. Variables that required combination of items based on items of different lengths made use of the protocol referred to as categorical principal components analysis (CATPCA) and was executed using the *Statistical Package for the Social Sciences* (SPSS). Optimal scaling is used in transformation of the variables. In the case of the variables created with the CATPCA program, the Cronbach's alpha reliability coefficient is based on the that program. Where means are created for a variable, the Cronbach's Alpha is computed on the basis of the original items. (See Appendix 1).

In the original telephone interview, scales as reported in Appendix 1 are opposite to those used, with the exception of size and age. (Thus, for instance, 1=yes and 2=no). These scales are reversed in order to expedite interpretation of results in the tables. Thus, a positive correlation is thus always to be interpreted as a positive relationship between the two variables.

### 5.3. Data Analysis

Bivariate relationships are first examined using Pearson product-moment bivariate correlation statistics. A multivariate model is then developed using Ordinary Least Squares multiple regression. A variety of models were tested in deriving the final model.

For hypotheses 2 and 3, two protocols were used to test for mediating effects of the strategy variables; one proposed by James and Brett (1984) and the second, by Baron and Kenny (1986). According to Baron and Kenny (1986) one can test for the mediating effect of variable  $m$  (strategy), by first examining the relationship between proposed antecedent  $x$  (family orientation) and consequence  $y$  (innovation performance), and then investigating the extent to which this relationship diminishes (or even vanishes) if mediating variable,  $m$  (strategy) is included in the model. Assuming significant relationships between  $x$  and  $y$ ,  $x$  and  $m$ , and  $m$  and  $y$  (using bivariate tests), to support the inference that  $m$  completely mediates the effect of  $x$  on  $y$ , the effect of  $x$  on  $y$  (i.e. the  $t$  value for the unstandardized  $b$  coefficient) should be significant in the model  $y=f(x)$  but not in the model  $y=f(m,x)$ .

Based on the same starting premise of significant bivariate relationships between  $x$  and  $y$ ,  $x$  and  $m$ , and  $m$  and  $y$ , James and Brett (1984) compare the models,  $y=f(m)$  and  $y=f(m,x)$ . If the added effect of  $x$  (tested by the significance of the  $R$ -squared change when  $x$  is added to the first model) is not significant,  $m$  can be seen as completely mediating the relationship between  $x$  and  $y$ . Conversely, a significant result provides support for a direct effect.

In this study we combine the two protocols by estimating three separate models:  $y=f(\text{family orientation controlled for context})$ ,  $y=f(\text{strategy})$  and  $y=f(\text{family orientation controlled for context};, \text{strategy})$ . We assume the presence of a mediating effect when the following



requirements are met: a) significant effect of  $m$  on  $y$  in the model  $y=f(m)$ ; b) a significant effect of  $x$  on  $y$  in the model  $y=f(x)$ ; and c) a nonsignificant effect of  $x$  on  $y$  in the model  $y=f(m,x)$ . Likewise, we assume the presence of a direct effect in the case of a significant effect of  $x$  on  $y$  in the model  $y=f(x)$  in combination with a significant added effect of  $x$  on  $y$  in the model  $y=f(m,x)$ .

## 6. Results and Discussion

Tables 1 and 2 summarize results for each of the hypotheses proposed in this study. The remaining part of this section discusses the corresponding results and conclusions in more detail.

### 6.1. Hypothesis 1: Effects of strategy on innovation

Reviewing the results of both Tables 1 and 2, the predictions made in Hypothesis 1 relating strategy and innovation, are statistically supported, even when innovation differentiation is added in the all variable model, although the B weights drop somewhat for the other strategy variables when it is include. This

### 6.2.Hypothesis 2: Testing for the direct effects of family orientation on innovation

Reviewing results of Table 2, the direct negative effect of family orientation on innovativeness was supported though the effect is rather small. In particular, the higher the family orientation, the less innovative a company will be. Family orientation explains 2-3 percent of the total variation in innovativeness. This finding is consistent with that of Gudmundson et al (1999) who also find a direct negative effect of family orientation on innovation. The effect may be strengthened by the strategies chosen by the family firm. For instance, our findings suggest that more family-oriented companies have a less formal strategic process. However no link is found with growth orientation .This contradicts earlier studies (Donckels, 1998; Donckels & Fröhlich, 1991; Gomez-Mejia et al., 1987; Martin & Suarez, 2001; Janszen,2000). Likewise, family-oriented companies are no less likely to follow a focus strategy, counter to suppositions of Carlock & Ward (2001), who suggest that family businesses are more likely to serve a niche market benefiting from the special knowledge of the family. More family-oriented firms do appear *less* likely to follow a differentiation strategy, developing unique products or services. (These findings hold up even if further analyses controlling for context).

### **6.3. Hypothesis 3: Testing for the indirect effects of family orientation on innovation**

In spite of the evidence of direct effects, there is also some evidence of indirect effects of family orientation on innovation. In particular, out of the total effect shown in Model II, compared with Models IV and V, the direct effect of family orientation would be the residual effects shown in these last two models. However, given the fact that there is a decrease in the effect of family orientation (from change in R squared of .03 to a change in .01), this residual of 2% would be the indirect effect. Perhaps more remarkable is the small size of both the direct and indirect effects. In short, although more family oriented SMEs are less innovative, the actual estimated difference, based on the multiple regression model, is pretty small (somewhere between 1 and 3% depending upon the other variables being controlled). Even in the bivariate analysis, the square of .17 is only about 3%, even when not controlling for size and other context factors.

### **6.4. Limitations of this study**

Owner-managers formed the sources of data for this study. Future studies on this subject could deal with the multi-level problem by questioning more than one respondent from the same company.

This study only tests for the possible mediating effects of strategy, in the relationship between family orientation and innovation performance. Other variables may also mediate this relationship, that have not been tested. Thus, although the conclusion that the effect of family orientation drops at least by a few percent as a result of including strategy in the model, is relatively safe to conclude, it is probably not safe to conclude that the remaining effects are direct. There may be other intervening or mediating variables between family orientation and innovation performance—organization structure for instance—that might also help to explain away the direct effect.

The hypotheses tested in this study could provide interesting findings when tested on a broader sample including more than just SMEs, or firms from other countries. When focusing on another subject, the family orientation variables of this study could also be used to predict other aspects of firm performance, like sales revenue, employment growth, productivity, net profit,

### **6.5. Practical Implications**

The results of this study conclude that family orientation has a very small negative impact on innovation performance of SMEs. Although this conclusion implies that the family orientation may indeed be an obstacle for innovation as was predicted by some earlier studies (Flören & Wijers, 1996; Donkels & Fröhlich, 1991; Gudmundson et al., 1999), most of this effect can be explained by differences in strategy. In particular, companies, regardless of family orientation, that are more risk oriented, more focused on a specific market niche, more oriented to innovation differentiation strategy and less reliant on a price discount strategy are almost as innovative as their nonfamily counterparts. Although not tested directly as a hypothesis, company size is also a strong predictor of innovation performance, consistent with some but not all other studies on size and innovation, but consistent with

a resource-based view, that larger firms have more resources available for new product development (Brown, 1998).

## **7. Conclusions**

This study aimed at identifying some of the factors determining innovation performance in the SME. Based on a sample of 388 Dutch SMEs, hypotheses were tested in particular regarding the main effects of strategy, and the direct and indirect effects of family orientation on firm performance. The results clearly support a relationship between different components of strategy and strategic process and innovation performance, even on a longitudinal basis of up to four years. Variables positively predicting innovation performance include greater risk orientation, greater growth orientation, a focus strategy, and innovation differentiation strategy. More formal strategic process is also positively related to innovation performance. The only strategy negatively associated with innovation performance is price discounting.

Family orientation has a statistically significant direct and indirect effect on innovation performance. However this accounts for only between 1 and 3% of variation, suggesting that there may be other mediating variables that might also explain differences between more and less family oriented SMEs, such as structure or other organization characteristics not measured in this study. Thus the conclusions should not be overstated. Indeed there is a small negative effect but probably much less than the dramatic differences sometimes presumed and stated in the nonempirical literature. Further research is needed to understand the further implications of these findings.

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Table 1: Pearson Correlations between All Variables for the Total Sample (n=338)

	1	2	3	4	5	6	7	8	9	10	11	12
1. Innovation performance	1											
2. Family Orientation	-.17 <sup>b</sup>	1										
3. Company Size	.36 <sup>c</sup>	-.03	1									
4. Company Age	.06	.06	-.29 <sup>c</sup>	1								
5. Manufacturing Sector	.03	-.01	-.03	-.05	1							
6. Retail Sector	-.03	-.08	.11	.04	-.30 <sup>c</sup>	1						
7. Focus	.27 <sup>c</sup>	-.01	.18 <sup>c</sup>	.01	-.06	-.08	1					
8. Risk orientation	.30 <sup>c</sup>	-.04	.20 <sup>c</sup>	-.04	.01	.01	.10	1				
9. Strategic Process	.37 <sup>c</sup>	-.18 <sup>c</sup>	.29 <sup>c</sup>	.05	.02	-.07	.20 <sup>c</sup>	.20 <sup>c</sup>	1			
10. Growth Orientation	.34 <sup>c</sup>	-.04	.28 <sup>c</sup>	.06	.11 <sup>a</sup>	-.02	.25 <sup>c</sup>	.18 <sup>c</sup>	.17 <sup>b</sup>	1		
11. Price discounting	-.09	-.00	.06	.08	.09	-.11 <sup>a</sup>	.02	-.05	-.04	.02	1	
12. Innovation differentiation	.48 <sup>c</sup>	-.18 <sup>c</sup>	.22 <sup>c</sup>	-.09	.04	-.07	.24 <sup>c</sup>	.24 <sup>c</sup>	.30 <sup>c</sup>	.20 <sup>c</sup>	-.09	1
MEAN	1.45	.03	2.49	27.72	0.34	0.15	-.01	0.00	1.75	1.31	2.23	2.13
STD. DEVIATION	0.39	1.45	1.53	26.92	0.47	0.35	0.88	0.99	0.35	0.46	.77	.67

a: p<.05; b: p<.01; c: p<.001, two-tailed tests of significance.

**Table 2: Regressions of family orientation, context and strategy on innovation performance (N=338)**

	<b>Model I</b>	<b>Model II</b>	<b>Model III</b>	<b>Model IV</b>	<b>Model V</b>	
	<b>Context</b>	<b>Context/FO</b>	<b>Strategy excl ID</b>	<b>Context/FO/Strategy excl ID</b>	<b>All variables</b>	
<b>Explanatory Variables</b>	<b>B (t-value)</b>	<b>B (t-value)</b>	<b>B (t-value)</b>	<b>B (t-value)</b>	<b>B (t-value)</b>	<b><math>\Delta R^2</math> <sup>a</sup></b>
<i>Context</i>						.14***/.03**
Company size	.10 (-7.20)***	.10 (-7.18)***		.05 (-3.96)***	.04 (-3.24)***	
Company age	-.00 ( 0.87)	-.00 ( 0.64)		-.00 (-0.06)	.00 (-0.86)	
Manufacturing	.02 ( 0.46)	.02 ( 0.38)		.02 ( 0.38)	.01 ( 0.27)	
Retail	-.06 (-1.06)	-.08 (-1.35)		-.04 (-0.74)	-.02 (-0.30)	
<i>Family</i>						.03**/.01#
Family Orientation		-.05 (-3.26)***		-.03 (-2.56)*	-.02 (-1.79) #	
<i>Strategy</i>						.36***/.23***
Focus			.07 ( 3.03)**	.06 ( 2.84)**	.04 (2.03)*	
Risk orientation			.07 ( 3.88)***	.06 ( 3.42)***	.05 (2.68)**	
Strategic process			.29 ( 5.29)***	.21 ( 3.74)***	.16 (2.89) **	
Growth orientation			.20 ( 4.69)***	.16 ( 3.71)***	.14 ( 2.47) ***	
Price discounting			-.04 (-1.70)***	-.05 (-2.19)*	-.04 (-1.66)#	
<i>Strategy excluding Innovation differentiation</i>						.28***/.09***
Innovation differentiation					.18 ( 6.20)***	.23***/.07***
<i>R-squared</i>	.14	.17	.28	.32	.40	
<i>Adjusted R-squared</i>	.13	.15	.27	.30	.37	
<i>F-statistic (df1, df2)</i>	13.50 (4,333)***	13.23 (5,332)***	25.29 (5,332)***	15.63(10, 327)***	19.33 (11,326) ***	

\*\* Significant at the 0.01-level; \* Significant at the 0.05-level

<sup>a</sup> Change in  $R^2$  when adding this variable first / last to the model (including all variables).

Note 1: *B*-values refer to the unstandardized coefficients of the explanatory variables.

## Appendix 1: Description of Variables<sup>1</sup>

Name of Variable	Description of Variable
<i>Innovation Performance</i>	
Innovation Performance $\alpha=.46$	For innovation performance, the mean of the following two questions was computed at time “t”(2005): 1. Has the company introduced new products, services or production processes to the market in the last 3 years? 2. Has the company introduced new products or services to the market in the last 3 years? (1= 'no' 2= 'yes'.)
<i>Family Orientation</i>	
Family Orientation $\alpha=.83$	This scale was created by combining answers to the following 12 questions using the CATPCA technique. (see text) Measured in time “t-3” years (2002). 1. What is the share of ownership within a single family? (1=<50%; 2=50%; 3=>50% but <100; 4=100%, The following were answered with the following scale: (1= 'yes', 2= 'no') 2. Two or more owners are related to each other? 3. Two or more generations of the same family are owners? 4. Members of one family own the company for at least two generations? 5. Owner plans to retain ownership within one family? 6. Two or more managers are related to each other? 7. Two or more generations of the same family are managers? 8. Would you describe your company as a family business?  The scales for the following items are indicated below each question or set of questions: 9. What is the likelihood of management transfer to family member of owner? (1= 'probably not' 1; 2= 'maybe'; 3= 'probably')  10. To what extent do family members determine strategy? 11. To what extent do family members determine culture? (1= 'not or to a very limited extent'; 2= 'to some extent'; 3= 'to a very large extent')  12. Is the predecessor of the CEO is related to the (current) owners? (1= 'predecessor from outside the family'; 2= 'no predecessor' 3= 'predecessor within family')
<i>Context</i>	
Company Size	Computed as the natural logarithm of the response to the following question at time “t- 2”years (2003). How many persons does the company employ? (Respondents and co-working family members included, part-timers count for their part-time)
Company Age	Computed based on the difference between founding year and 2003 (measured at time “ t-2 “years (2003).
Manufacturing Sector	Whether the company is operating in a manufacturing sector. Question; Is the company operating in either the industrial sector or in construction? (1= 'no'; 2= 'yes',)
Retail & wholesale Sector	Whether the company is operating in the retail & wholesale sector. Question; Is the company operating in retail & wholesale? (1= 'no'; 2= 'yes',)
<i>Strategy</i>	
Focus $\alpha=.82$	The company follows a 'Focus' competitive strategy, on a particular target market (t-4; 2001, and on-going). This scale was based on two items, combined using the CATPCA method: 1. Is the statement relevant/true for the company: To beat our competition, we focus on a specific target group of customers. (1= 'not relevant at all'; 2= 'partly relevant'; 3= 'very relevant', .) 2. Does your company export goods and/or services outside the country? (1=no; 2=yes;)



Risk Orientation $\alpha=.75$	<p>Whether the company is willing to take business risk (t-3; 2002) This scale was based on two items, combined using the CATPCA method:</p> <p><i>1. If you have to choose, which of the following descriptions best fits your business? (1=There is a preference to make decisions with little risk, where the expected yield is "normal" and known in advance; 2=There is a preference to make decisions with reasonable to great risk, where the expected returns are variable but high)</i></p> <p><i>2. Which of the following better describes the philosophy of your firm? (1=Working cautiously in a step-by-step manner; 2=A preference for daring decisions as opposed to cautious actions).</i></p> <p><i>3. Which type of decisions does your business take in situations of uncertainty? (1=An anticipatory approach to avoid costly decisions; 2=A pro-active strategy to exploit different possibilities)</i></p> <p><i>4. How much risk does the company take, compared to other companies? (1='very little risk to no risk'; 2='very little risk'; 3='some risk', 4='relatively much risk', 5='much risk'.)</i></p>
Strategic Process $\alpha=.53$	<p>This scale is based on a mean of the following two items: (t-4; 2001)</p> <p><i>1. Is the competitive strategy for your business written down? (1=no; 2=yes;)</i></p> <p><i>2. Do you approach strategy systematically? (in a planned manner) (1=no; 2=yes;)</i></p>
Growth Orientation	<p>Whether the desire or wish to grow is present in the company. (t-4; 2001) <i>Question; Do you want to let the company grow?</i> (1='no'; 2='yes'.)</p>
Price discounting	<p>The company follows a 'Price discounting' competitive strategy (t-1; 2001) <i>Is the statement relevant/true for the company: To beat our competition, we keep our prices as low as possible.</i> (1='not relevant at all'; 2='partly relevant'; 3='very relevant')</p>
Innovation Differentiation $\alpha=.75$	<p>The company follows an 'Innovation differentiation' competitive strategy. (t-4; 2001) This scale is based on a mean of the following two items:</p> <p><i>1. How much thought have you given in the past 3 years to the following means to compete? "Bringing new products to the market".</i></p> <p><i>2. How much thought have you given in the past 3 years to the following means to compete? "Developing new products."</i> (1='none at all'; 2='little thought'; 3='much thought')</p>

1: As presented, all scales are reversed from what was originally measured, with the exception of company size and age. This is to expedite interpretation of signs in the tables. Thus, for instance, for innovation performance, originally 1=yes, 2=no, etc.).

Appendix 2: Proposed Model: Influences of Family Orientation and Strategy on Innovation Performance

