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# Family Orientation, Strategic Orientation and Innovation Performance in SMEs: A Test of Lagged Effects

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**Abstract:** Past research suggests a negative effect of family orientation on innovation performance. However, many past studies have certain limitations that this study is designed to overcome. In particular, this study estimates *lagged* effects of family orientation on innovation performance while *controlling for organization context variables* and the mediating effect of strategic orientation. It also uses a multidimensional approach to measure family orientation while testing for common method bias.

This study makes use of a sample of 343 Dutch small and medium size firms. Innovation performance, being the dependent variable, was collected in 2005. All independent variables, i.e. strategy, family orientation and context variables, are collected in previous time periods, with lags ranging between 3 and 4 years. Family orientation is measured according to five independent dimensions including family power, family culture, overlap of ownership and management and intentions to keep the firm in the family.

Controlling for differences in organization context, strategic orientation variables positively predicting innovation performance at a  $p < .01$  level of significance include risk orientation, a focus strategy, and strategic writing. A total effect of family orientation (based on family power) explains only about one percent of total variance in the dependent variable of innovation performance. Even this small effect disappears when strategic orientation is also included in the multiple regression model, suggesting that effects of family orientation on innovation performance are indirect, if any. In summary, this study concludes therefore that there is little basis for presuming that family-owned and managed firms are less entrepreneurial or innovative than their nonfamily counterparts, at least amongst Dutch SMEs.

**Keywords:** innovation, family orientation, strategic choice, strategic orientation

## 1. Introduction

In spite of the unmistakable share of family firms in the economy, our understanding of the differences between predominantly family owned and managed and other types of small and medium sized firms is still quite limited. The primary research question explored in this paper is as follows:

What are the effects (direct and indirect) of family orientation on innovation performance in the small to medium sized firm (SME)?

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. It does not include innovation strategies or intentions, or the adoption of an idea or behaviors that is new only to the adopting organization (Daft, 1982; Damanpour and Evan, 1984). With a few exceptions to the contrary (e.g. Gudmundson, Hartman and Tower, 1999), past research often characterizes family-owned firms as less innovative than their nonfamily counterparts (Dekkers, 2003; Donckels and Fröhlich, 1991; Harris, Martinez and Ward, 1994; Flören and Wijers, 1996; Gallo, 1995; Westhead, 1997). The stereotype appears to persist, furthermore, that family-owned firms are risk-averse, less likely to be growth oriented, and generally thus less entrepreneurial in strategic orientation, all of which would be expected to result in lowered innovation performance compared with their nonfamily-owned counterparts. The purpose of the present study is to test these assumptions, attempting to overcome a number of limitations in past research.

In particular, past research on family orientation and innovation is limited, *first* of all by the lack of controls for size and sector (Donckels and Fröhlich, 1991; Gudmundson, et al, 1999). A *second* shortcoming is the difference in the way in which family orientation is defined and measured. Studies vary in their definition and operationalization of family firms, with some definitions overlapping such concepts as owner-management (e.g. Dailey and Dollinger, 1992, 1993) or majority ownership (e.g. Westhead, 1997; Donckels and Fröhlich, 1991). This study adapts a multidimensional interpretation of family orientation, along the lines of more recent research by Astrachan, Klein and Smyrniotis, (2002) and Uhlaner (2005). A *third* shortcoming in past research is the failure, in almost all past studies, to test for common method bias and/or possible lagged

effects. A *fourth* and final shortcoming in the majority of previous studies is the lack of an empirical test for mediating effects of strategic orientation as mediating variable.

Strategic orientation variables examined in this study include risk orientation, strategic writing and focus. Context variables include company size, company age, and sector (manufacturing, service or retail). Family orientation is a multidimensional concept further developed in the paper.

Recent research on SMEs continues to confirm the proposition that innovation performance is positively associated with such performance indicators as sales turnover and growth in employment (for instance, Aragón-Correa, García-Morales and Cerdón-Pozo, 2007; Freel, 2000; Irwin, Hoffman, and Lamont, 1998) suggesting that identifying the antecedents of innovation performance is a useful and important research endeavor. The present research also has important policy implications. In spite of their contribution to many of the world's economies (Klein, 2000), a persistent belief the family-owned firms are less innovative, and in turn weaker contributors to new job creation, often leads to government policies where their needs are overlooked. Thus, even support of the null hypothesis in the proposed research could have significant consequences for policy-making.

The remainder of the paper is organized as follows. Section 2 presents the theoretical background, model and hypotheses. Sections 3, 4, 5, and 6 present the methods, results, discussion and conclusions, respectively.

## **2. Theoretical Background, Model and Hypotheses**

### **2.1. Strategic orientation variables and innovation performance**

The strategic choice paradigm postulates that key decision-makers have considerable control over an organization's future direction (Entrialgo, 2002; Child, 1972; Child, 1997). The leadership of an organization is assumed to act purposively-- their behavioral intentions are aimed at achieving certain outcomes for the organization and are not random in nature (Child, 1997).

In the entrepreneurship literature, three research streams have provided useful interpretations of the strategic-choice model, including Miles and Snow's typology of strategic orientation (i.e. prospector, analyzer, reactor and defender) (Miles and Snow, 1978; Zahra and Pearce, 1990), the entrepreneurial orientation paradigm (Lumpkin and Dess, 1996) and Porter's generic strategic strategies model (Porter, 1985). A closer examination of these three research streams suggests a number of relevant variables for the present study.

In particular, according to the Miles-Snow typology, *prospectors* are defined as firms who have a specific program to be innovators and are willing to take the necessary risks of promising new products and services (Miles and Snow, 1978; Daily and Dollinger, 1992). *Reactors* on the other hand do not have a specific program or plan, and make changes only in the face of strong threats (Daily and Dollinger, 1992). Rather than propose a typology, Lumpkin and Dess (1996) identify components of entrepreneurial orientation to include the willingness to innovate and take risks, to be aggressive toward competitors and to be proactive relative to marketplace opportunities (Lumpkin and Dess, 1996, p. 1996). Hult, Hurley, and Knight (2004), and Zahra (2005) suggest a positive relationship between entrepreneurial orientation and innovation performance. The Miles-Snow typology and EO paradigm both refer to risk orientation and strategic writing may be important aspects of strategic orientation predicting innovation performance in SMEs.

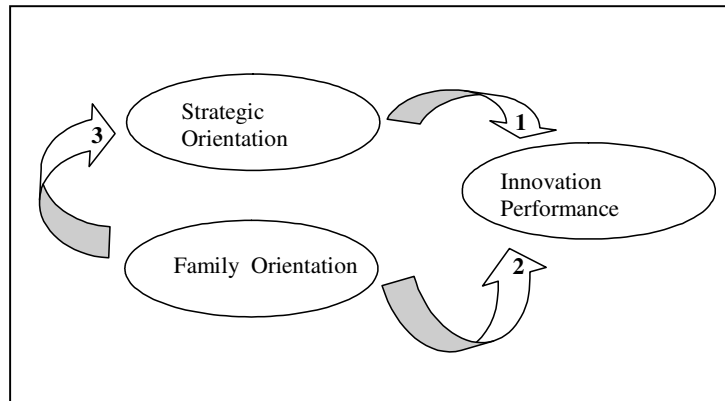
The third strategic orientation variable, *focus*, is derived from Porter's model of generic strategies. Focus refers to focus on a specific market niche—a target group of customers, for instance, or certain distribution channels. In this study, exporting is considered an aspect of focus, since this implies a strategy targeting a specific market: i.e., customers in a country or countries outside the company's home base. Focus is included as a strategic orientation since it may be associated with seeking out new markets for existing products and services.

### **2.2. Family Orientation**

Uhlner (2005) provides an overview of criticisms of previous definitions of family business, especially those that are unidimensional and/or dichotomous. Building on past research, we identify four distinct family orientation factors, including family power, family culture, future family intentions to keep the firm in the family and overlap of ownership and management (Astrachan, et al, 2002; Dekkers, 2003; Donckels and Fröhlich, 1991).

### **2.3. The model and hypotheses**

Figure 1 presents a simplified view of the proposed model. In particular, the model proposes first of all that both strategic orientation (Arrow 1) and family orientation (Arrow 2) have direct effects on innovation performance. Arrow 3 represents the prediction, furthermore that family orientation has an indirect effect on innovation performance, with strategic orientation as mediating variable.



**Figure 1:** Proposed research model of family orientation, strategic orientation, and innovation performance

### 2.3.1. Strategic Orientation and innovation performance

The strategic choices made by management are expected to impact the degree of innovation performance in the firm. In keeping with past empirical research especially by Hult, et al (2004), Zahra and Pearce, (1990), and Dekkers (2003), we predict that firms that are more risk-oriented and which use strategic writing and a focus strategy are more likely seek out ways to create new markets by identifying new products or services for their customers. We summarize this hypothesis as follows:

*Hypothesis 1:* SMEs with a strategic orientation which is more entrepreneurial (i.e. greater risk orientation) and more strategic in general (i.e. greater use of strategic writing and a focus strategy) are also likely to report a higher level of innovation performance.

### 2.3.2. Direct effects of Family orientation and Innovation Performance

Arrow 2 in Figure 1 proposes a direct relationship between family orientation and innovation performance. Even quantitative studies controlling for organization size have found a small but persistent, significant negative effect which explains between 1 and 3% of the variance of innovation performance (Dekkers, 2003; Donckels and Fröhlich, 1991; Uhlaner, et al, 2006). The present study tests for possible direct effects. One reason why family orientation may directly influence innovation performance independently of strategic orientation could be based on differences in the ability of the decision-maker(s) who run the firm. In particular, some researchers propose that entrepreneurs are thought to have a special alertness to new opportunities, which can be referred to as a so-called “founder effect” (Kirzner, 1973; Landström, 2005; Zahra, 2005). Though Zahra finds no support for the founder effect on innovation performance, his sample includes family firms only. Summarizing:

*Hypothesis 2:* Firms scoring higher on family orientation are likely to score lower on innovation performance than those firms scoring lower on family orientation (direct effect).

### 2.3.3. Indirect effects of family orientation and innovation performance

Arrow 3 (Figure 1) represents an indirect effect of family orientation on innovation performance, mediated by strategic orientation. The basic argument for predicting indirect effects is that family oriented firms are likely to be less entrepreneurially oriented, with respect to strategic orientation, and that it is thus their lowered propensity to take risks (Donckels and Fröhlich, 1991; Westhead, 1997), to plan strategically and to choose a focus strategy which aims at a particular market which can help to explain any residual differences in innovation performance.

The support regarding family orientation and strategic writing is indirect. For instance, McCann, Leon-Guerrero and Haley (2001), find that prospectors (who are characterized as more risk oriented and innovative) are also more likely to plan strategically and to have a mission statement. Thus, we include

strategic writing (as well as focus, which suggests a type of deliberate strategizing), in the following hypothesis:

*Hypothesis 3:* Any effect of family orientation on innovation performance is indirect, mediated by various aspects of strategic orientation (including risk orientation, focus and strategic writing).

### 3. Method

#### 3.1. Sample and data collection

This study makes use of a subset of a random, stratified sample tracked longitudinally by EIM Business Policy and Research since 1998. Sectors included 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). Subsidiaries and firms transferred during the period under study were excluded from further analysis. This resulted in an available sample of 343 firms. Data was collected via several rounds of telephone (computer-aided) interviews between 2001 and 2005 (time periods for different variables noted in Appendix A).

#### 3.2. Measures and Scale development

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, focus and strategic writing. Control variables include company size, company age, and sector.

#### 4.3. Data Analysis

Proposed hypotheses were tested using hierarchical multiple regression procedures, with control variables included as the first block of variables. Variables were checked first using the common method bias test (Podsakoff and Organ, 1986) and for multicollinearity, using VIF (Variable Inflation factor) scores. Items with differing scales were combined using optimal scaling techniques. In Hypotheses 1 and 2, support for the hypothesis is based on the added significance of the change in  $R^2$  for the variable being tested after including controls in the regression equation.

To test for the mediating effects of strategic orientation proposed in Hypothesis 3, we use the following protocol (Verheul, Uhlaner, and Thurik, 2005; Baron and Kenny, 1986; James and Brett, 1984).

Referring to the following four models:

$$IP=f(FO, OC) \quad (1)$$

$$SO=f(FO, OC) \quad (2)$$

$$IP=f(SO, OC) \quad (3)$$

$$IP=f(FO, SO, OC) \quad (4)$$

where IP=innovation performance; FO=family orientation; OC=organization context and SO=strategic orientation.

We assume the presence of a mediating effect of strategic orientation variables when the following requirements are met: a) a significant effect of family orientation on innovation performance in model (1) and on strategic orientation in model (2). b) significant effect of strategic orientation on innovation performance in model (3); and c) a nonsignificant effect of family orientation on innovation performance in model (4).

### 5. Results

#### 5.1. Family orientation dimensions

Four family orientation factors, family power, family future, family culture, and owner-manager are identified as a result of a rotated principal components analysis.

#### 5.2. Tests of the hypotheses

Before completing the remaining analyses, a test for common method bias was carried out for all the individual items used in the family orientation, strategic orientation and innovation performance scales. Results are supportive of ruling out common method bias, due to the relatively low variation explained by the first factor (19%) and low cross loadings throughout the matrix (all cross loadings are less than .30). (See appendix B).

Table 1 shows the results of Model (1)  $IP=f(FO,OC)$ . Only the regression coefficient for family power is significant ( $p<.05$ ). The effects of family future, family culture and owner-manager on innovation performance are not significant when controlling for context.

**Table 1:** Family orientation constructs as predictors of innovation performance

	Family power	Family future	Family culture	Owner-manager
Explanatory variables	B-value	B-value	B-value	B-value
size	.18**	.18**	.17**	.17**
age	.00	-.00	-.00	.00#
Manufacturing sector	-.04	-.02	-.02	-.01
Retail sector	.27#	.28#	.25	.27#
Family power	-.09*			
Family future		-.07		
Family culture			-.05	
Ownership share				-.05
$\Delta R^2$ – for FO <sup>a</sup>	.01*	.01	.00	.00
R – square	.08	.08	.08	.08
F – statistic	6.21**	5.76**	5.60**	5.58**

\*\* :  $p < 0.01$ ; \* :  $p < 0.05$ ; # :  $p < 0.1$ ; n=343; <sup>a</sup> The variable entered after the controls.

**Table 2:** Family orientation constructs as predictors of strategy (Model 2)

	Risk orientation	Focus	Strategic writing
Explanatory variables	B-value	B-value	B-value
size	.07	.15**	.31**
age	.00	.00#	.00
Manufacturing sector	.02	.19	-.23#
Retail sector	-.13	.34	-.12
Family power	-.06	-.01	-.09
Family future	-.01	-.04	-.12#
Family culture	.05	-.05	-.06
Owner-manager	-.05	-.03	-.10
$\Delta R^2$ – for FO <sup>a</sup>	.01	.00	.04**
R – square	.02	.04	.17
F – statistic	.67	1.92#	8.76**

\*\* :  $p < 0.01$ ; \* :  $p < 0.05$ ; # :  $p < 0.1$ ; n=343; <sup>a</sup> The variable entered after the controls.

**Table 3:** Family power and strategy as predictors of innovation performance (Model 1)

	strategy +context	Strategy+context + family	$\Delta R^2$ <sup>a</sup>
Explanatory variables	B-value	B-value	First/ last
context			
size	.11**	.12**	
age	.00	.00	
Manufacturing sector	-.02	-.04	
Retail sector	.26#	.26#	
Strategy			.07**/.06**
Focus	.12**	.12**	
Risk orientation	.10**	.10**	
Strategic writing	.12**	.10**	
Family			.02/.01
Family power		-.06	
Family future		-.02	
Family culture		-.03	
Owner-manager		-.01	
R – square	.14	.15	
F – statistic	7.80**	5.22**	

\*\* :  $p < 0.01$ ; \* :  $p < 0.05$ ; # :  $p < 0.1$ ; n=343; <sup>a</sup> The variable entered after the controls.

Table 2 shows the results of Model (2)  $SO = f(FO, OC)$ . Family orientation (through family future) contributes a small (4%) but statistically significant amount of variance to prediction of strategic writing. There is a lack of a significant relationship between either family power or experience and the variables focus, and risk orientation.

Finally, Table 3 presents results for Models (3) and (4). Reviewing the results, regression coefficients for all three strategic orientation variables are significant ( $p < .01$ ). Reviewing the results of Model (4), the residual effects of family orientation diminishes to zero.

## **6. Discussion**

### **6.1. Level of support for the hypotheses**

Reviewing the results of the study, there appears to be strong support for Hypothesis 1 which predicts a relationship between strategic orientation and innovation performance, even when controlling for organization context. Examining the results for Hypotheses 2, however, there is no support for a direct effect of family orientation on innovation performance. Reviewing results for Hypothesis 3, there is very limited support for an indirect effect of family orientation on innovation performance. It would appear that about 1% of the variation in innovation performance may be explained by family orientation, when strategic orientation is excluded from the model, but these effects disappear when strategic writing, in particular, is included in the model.

Consistent with research by Jorissen, Laveren, Martens and Reheul (2006), size is an important control variable which helps to explain some of the differences in outcomes between the present and past research. For instance, research by Donckels and Fröhlich (1991), which shows approximately 1% variation explained by ownership share (the family variable used in their study), is eliminated once organization size is included in the model.

Common method bias, different operationalization of the family orientation and innovation performance variables and/or lack of use of lagged data may also explain differences between other research which controls for context (e.g. Dekkers, 2003).

### **6.3 Limitations of this study and directions for future research**

In spite of efforts to overcome some of the already cited limitations from past research, there are some remaining limitations of the present research. First of all, the present research was based on self-reports from one respondent from each firm. Furthermore, this study only tests for the possible mediating effects of strategic orientation. Structural equation modeling would provide another perspective on the possible underlying structure of family orientation and its contribution to the prediction of both strategic orientation and innovation performance, by providing a better test of a path model.

Finally, the current research was based on a sample of Dutch SMEs. Generalization of the findings would depend on a retest on larger organizations, including both listed and closely-held firms, as well as firms from other countries.

## **7. Practical Implications and conclusions**

Given the results of this study, policy makers should not conclude that at least amongst SMEs, firms with various family orientation characteristics are likely to be any less entrepreneurial or innovative than their nonfamily counterparts. Any policies that prejudice against family owned firms, whether younger or older, are likely unnecessarily to discriminate against a particular subset of the business population. Given the special issues faced by family-owned firms, including the challenges of business transfer, less innovation should not be used as a reason to ignore such problems.

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Appendix A: List of Variables<sup>1</sup>

Name of Variable/Category	Description of Variable
Innovation Performance $\alpha = .69$	"t"(2005): 1. Has the company introduced new products or services to the market in the last 3 years? 2. Has the company introduced improvements or renewals in production processes in the last 3 years? 3. Has the company spent money on renewals in 2004? (1='no'2='yes',)
Family Orientation Variables:	"t-3" years (2002).
Family power $\alpha = .74$	1. Two or more owners are related to each other? 2. Two or more managers are related to each other? (1='no', 2='yes')
Family future $\alpha = .80$	1. Owner plans to retain ownership within one family? (1='no', 2='yes') 2. What is the likelihood of management transfer to family member of owner? (1='probably not'1; 2='maybe'; 3='probably')
Family culture $\alpha = .93$	1. To what extent do family members determine strategy? 2. 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')
Owner-,manager $\alpha = .89$	1. CEO is (one of the) owner(s) 2. CEO is (one of the) owner(s) or family from the owner(s) (1='no'2='yes',)
Context Variables:	
Company Size (natural logarithm)	"t- 3"years (2002). 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 2002 (measured at time " t-3 "years (2002).
Manufacturing Sector	Is the company operating in either the industrial sector or in construction? (0='no'; 1='yes',)
Retail & wholesale Sector	Is the company operating in retail & wholesale? (0= 'no'; 1='yes',)
Strategic Orientation Variables:	
Focus $\alpha = .87$	(t-4; 2001) 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?

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Risk Orientation	(1=no; 2=yes;) (t-3; 2002)
$\alpha = .74$	1. 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) 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). 3. 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',)
Strategic writing	(t-2/t-1; 2003/2004)
$\alpha = .82$	1. Are the renewal efforts for your business written down? (2003) 2. Are the renewal efforts for your business written down? (2004) (1=no; 2=yes;)

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1: As presented, some scales are reversed from what was originally measured to aid in table interpretation. Multiple item scales combined through averaging; optimal scaling techniques used for items with different scale lengths.

**Appendix 2: Common method bias test**

	1	2	3	4	5	6	7	8
1. Has the company introduced new products or services to the market in the last 3 years?						.59		
2. Has the company introduced improvements or renewals in production processes in the last 3 years?						.70		
3. Has the company spent money on renewals in 2004?						.82		
4. To beat our competition, we focus on a specific target group of customers.								.79
5. Does your company export goods and/or services outside the country?								.79
6. Which of the following descriptions best fits your business?					.81			
7. Which of the following better describes the philosophy of your firm?					.73			
8. How much risk does the company take, compared to other companies?					.71			
9. Are the renewal efforts for your business written down? (2003)								.85
10. Are the renewal efforts for your business written down? (2004)								.81
11. Two or more owners related to each other.					.88			
12. Recoded: management includes at least 2 people from the same family.					.88			
13. Owner plans to retain ownership within the family					.92			
14. Recoded: likelihood of management transfer to family member of owner.					.88			
15. To what extent do family members determine strategy ?	.96							
16. To what extent do family members determine culture?	.96							
17. CEO is (one of the) owner(s)		.92						
18. CEO is (one of the) owner(s) or family from the owner(s).		.92						

Extraction Method: Principal Component Analysis.

Rotation Method: Varimax with Kaiser Normalization.

a Rotation converged in 6 iterations. All cross-loadings (not shown) are less than .30.

**Appendix 3: correlations**

	1	2	3	4	5	6	7	8	9	10	11	12
1. Innovation performance	1.00	-.07	-.06	-.08	-.08	.22**	.14**	.24**	.24**	.00	-.04	.08
2. Family power	-.07	1.00	.27**	.15**	.16**	-.02	-.06	-.07	.16**	.12*	-.10	.04
3. Family future	-.06	.27**	1.00	.11*	.06	-.04	-.03	-.11*	.08	.14**	-.06	.10
4. Family culture	-.08	.15**	.11*	1.00	.06	-.07	.03	-.10	-.06	.06	-.02	-.07
5. Owner-manager	-.08	.16**	.06	.06	1.00	-.03	-.06	-.15**	-.10	-.09	.06	.01
6. Focus	.22**	-.02	-.04	-.07	-.03	1.00	.03	.15**	.14**	-.05	.05	.06
7. Risk orientation	.14**	-.06	-.03	.03	-.06	.03	1.00	.08	.06	-.04	.02	-.05
8. Strategic process	.24**	-.07	-.11*	-.10	-.15**	.15**	.08	1.00	.35**	.04	-.09	-.04
9. Size	.24**	.16**	.08	-.06	-.10	.14**	.06	.35**	1.00	.31**	-.03	-.05
10. Age	.00	.12*	.14**	.06	-.09	-.05	-.04	.04	.31**	1.00	.03	.01
11. Manufacturing sector	-.04	-.10	-.06	-.02	.06	.05	.02	-.09	-.03	.03	1.00	-.23**
12. Retail sector	.08	.04	.10	-.07	.01	.06	-.05	-.04	-.05	.01	-.23**	1.00

\*:  $p < 0.01$  (2-tailed); \*\*:  $p < 0.05$  (2-tailed); n=343

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