DIFFERENCES BETWEEN FAMILY AND NON-FAMILY FIRMS
The impact of different research samples with increasing elimination
of demographic sample differences[*]

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ABSTRACT: This article presents a bivariate comparison of Flemish family and non-family firms, investigating differences with respect to CEO characteristics, strategy, management information systems, environment, financing issues, performance and growth. Several authors have indicated that observed differences between family and non-family firms in empirical research often are not caused by the family character, but by 'demographic sample' differences relating to firm size and age, sector and geographical location of the business. By trying to control for size and sector differences using the matched pairs methodology we will analyze the impact of detecting 'real' rather than 'demographic sample' differences between family and non-family firms.

Introduction

The few comparative studies of family and non-family firms have generally ignored that firm demographics (location, size, age, sector) can distort bivariate studies exploring the management and performance differences between both groups of firms. Many empirical studies revealed that family firms differ from non-family firms with respect to firm size and age. Moreover family firms are found to operate in other sectors and locations than non-family firms. Previous studies that did not control for these demographic differences between family and non-family firms may have identified 'demographic sample' rather than 'real' management and performance differences between both groups of firms (Westhead and Cowling, 1998). This article constitutes a methodological contribution to family business research as we try to address this problem. We explicitly study the impact of demographic sample differences (size, sector) between family and non-family firms on our empirical results concerning the management and performance contrasts between both groups of firms. This is enabled by our large-scale research population out of which two research samples are created that demonstrate an increasing elimination of size and sector differences between family and non-family firms. This allows us to filter out the impact of the family character.

A second contribution of this article is that we were able to compare the company performance of family and non-family firms based on data obtained from the financial statements published by those companies. In survey-based research on SMEs company performance is often measured using the subjective appreciation of the management.

For the purpose of this research we consider as a family firm the firms that perceive themselves as family firms, and in which a family possesses the majority of the shares. Non-family firms were defined as firms that do not perceive themselves as family firms, and in which a family does not own the majority of the shares. This definition is consistent with the definition used by Westhead (1997).

The article is divided into four sections. The first section discusses the research methodology. In the second section prior research findings are reviewed, testable hypotheses are developed and the results of our statistical analyses for the two samples are shown. The last two sections give the conclusions and recommendations for future research.

Methodology

Research population and data collection

The data for this research purpose stem from a large-scale survey, undertaken in May 2001. The research population for conducting the survey was constructed along the following lines. Based on size, sector and location of all firms in the Flanders region of Belgium that have published financial statements over the years 1993-1999, a three dimensional matrix was designed. In a second step 10% (21,640 companies) of that population was chosen at random according to the percentages of the three dimensional matrix. Within that group all companies with at least five full time employees received a questionnaire (8,367 companies). This implies that start-ups and micro-firms are excluded from the study. The mailing was addressed to the president of the firm, the CEO or the financial director. We received 839 usable questionnaires, representing a response rate of 10.03 %. In order to assess the representativeness of our sample we conducted chi square tests to detect differences between the responding firms (839) and the original 8,367 firms that were sent a survey. We examined differences with regard to employment and asset size of the company, sector, location of the business and growth. Our results revealed that the respondents are significantly (p < 1%) larger with respect to employment and assets than the original 8,367 firms. This means that a lower response rate is obtained with regard to smaller companies. This is consistent with other survey research studies. With respect to the other variables however the sample was found to be representative. Further statistical analyses on the characteristics of the hundred earliest versus the hundred latest respondents did not reveal the existence of a non-response bias. For the purpose of this paper only 757 firms remain since 82 firms of the population of 839 respondents could neither be identified as family nor as non-family firms.

Use of different subsamples from the research population

Several authors have expressed their concern that observed differences between family and non-family firms in empirical research may be caused by size, age, sector and geographical location differences between both groups of firms, and not by the family character (Westhead

and Cowling, 1998). Therefore we check whether such 'demographic' differences (size, age, industry) between family and non-family firms exist in our sample.

Location differences between family and non-family firms have been controlled for since we restricted our survey to firms located in the Flanders region of Belgium.

Table 1 Differences between family and non-family firms concerning firm size and age

	family firms			non-family firms			p
	N	*mean*	std.	N	*mean*	std.	M-W
employment (FTE)	627	29	64	130	200	771	***
assets (million Euros)	627	3.57	10.46	130	61.42	278.15	***
	N	*mean*	std.	N	*mean*	std.	t-test
firm age (years)	601	35	27	124	31	26	ns

N represents the number of firms that answered the question
ns　　: not statistically significant
*　　 : statistically significant at the 0.1 level of significance
**　　: statistically significant at the 0.05 level of significance
***　: statistically significant at the 0.01 level of significance

Table 1 reveals that the family firms in our sample are significantly smaller than non-family firms. This result for firm size is consistent with previous empirical findings (Daily and Dollinger, 1993; Cromie et al., 1995; Gallo, 1995; Wall, 1998 and Klein, 2000).

Table 2 Sector differences between family and non-family firms

	family firms				non-family firms				p
	N	*manufacturing*	*trade*	*services*	N	*manufacturing*	*trade*	*services*	χ^2 test
sector	625	51.2%	40.3%	8.5%	129	45.7%	35.7%	18.6%	***

For a table description: see table 1

Table 2 shows that the family firms in our sample are significantly less active in the services sector. This finding, however, is in contrast with previous empirical studies (Cromie et al., 1995; Stoy Hayward, 1992) revealing that a larger proportion of service businesses are family companies. A reason for their result is that manufacturing firms tend to be more capital intensive than service firms, which requires additional equity investors, and with more investors there is a decreased likelihood of maintaining family ownership (Daily and Dollinger, 1992). Our finding, which is the opposite of Cromie's (1995) and Stoy Harward's (1992) finding, can be attributed to the difficulty to preserve expertise and specialized knowledge, which is needed to a larger extent in the service sector, across generations.

Concerning firm age our results do not reveal significant differences between family and non-family firms. Previous empirical evidence in this respect provides conflicting results. The results of Daily and Dollinger (1993), Leach (1991) and Ward (1987) reveal that family firms are younger than non-family firms. Wall (1998), Westhead (1997) and Klein (2000), however, find that family firms tend to be older than non-family firms.

We try to control for the 'demographic' size and sector differences which appear to be present in our sample and to filter out the impact of the family character on the topics under study: CEO characteristics, strategy and environment, management information systems, financing issues and performance and growth. Our large-scale sample enables us to apply significance tests in two subsamples with increasing elimination of the size and sector differences between family and non-family firms. Table 3 shows the number of firms present in each research sample.

Table 3 Composition of the two samples

Sample	number of family firms	number of non-family firms	Total
1	627 cases (82.8%)	130 cases (17.2%)	757 cases
2	89 cases (50%)	89 cases (50%)	178 cases

The table shows that more than 80% of the companies in the first sample are family firms. This figure is similar to the figure for other countries. Lank (1993) estimates that 75% of the businesses in the UK, 80% of the businesses in Spain, more than 90 % in Sweden and 99% in Italy are family businesses. Burns and Whitehouse (1996) report that 85 % of businesses in the European Union and 90% of the US businesses are family businesses.

The two samples are created along the following lines. The first research sample is composed of the whole population of respondents to the survey. To construct the second sample we start from the whole population of 757 firms. Then, using a 'matched' pair methodology, we simultaneously control for the potentially distorting influence of both the size of the company (employment as well as total assets) and the sector of the company (4-digit NACE code). According to these criteria two matched subsamples of family and non-family firms, each containing 89 cases, are drawn from the 757 companies. This sample is thus free from both size and sector differences between family and non-family firms (see table 4 and 5).

Table 4 Size differences between family and non-family firms

	S	family firms			non-family firms			p
		N	*mean*	std.	N	*mean*	std.	MW + W°
employment	1	627	29	64	130	200	771	***
(FTE)	2	89	46	103	89	40	52	ns
assets	1	627	3.6	10.5	130	61.4	278.2	***
(million Euros)	2	89	7.6	16.5	89	6.9	14.9	ns

For a table description: see table 1

° In the first sample tests for random observations are needed: t -, χ^2 - and Mann Whitney (MW) tests. In the second sample tests for paired observations are needed: paired t -, Mc Nemar (McN) and Wilcoxon signed ranks (W) tests.

Table 5 Sector differences between family and non-family firms

		N	*manufac -turing*	*trade*	*ser- vices*	N	*manufac -turing*	*trade*	*ser- vices*	χ^2 + McN
sector	1	625	51.2%	40.3%	8.5%	129	45.7%	35.7%	18.6%	***
	2	88	48.9%	37.5%	13.6%	88	48.9%	37.5%	13.6%	ns

For a table description: see table 1

Westhead and Cowling (1998) recommend the matched pairs methodology for detecting 'real' rather than 'sample' differences between family and non-family firms within a bivariate framework. Besides firm size and sector, firm age is another recommended matching variable. Our data, however, do not allow matching simultaneously on size, sector and age. In our opinion this shortcoming is mitigated by the fact that our sample excludes young firms below seven years old. We namely selected companies for which the financial statements were available since the year 1993.

Our aim is to find 'real' differences between family and non-family firms. As a consequence the results of the second sample will be more important than those of the first sample. We will check whether the choice of the subsample influences our findings and based on these results we will assess whether prior literature findings detected 'real' or 'demographic sample' differences. In the first research samples significant differences between family and non-family firms are identified using Student's t-tests (for continuous variables), Mann Whitney tests (for continuous variables that do not meet the normality assumption, and for ordinal variables) and chi square tests (for nominal and ordinal variables). In the second research sample we conduct paired t-tests (for continuous variables), Wilcoxon signed ranks tests (for continuous variables that do not meet the normality assumption, and for ordinal variables) and Mc Nemar tests (for nominal variables).

Differences between Family and Non-Family Firms

In our study we focus on CEO characteristics, strategy and environment, management information systems, financing issues, performance and growth. For each of these topics we provide a literature review, develop hypotheses and discuss the empirical results of our study.

CEO Characteristics

Literature Review

Concerning CEO characteristics previous research revealed the following results. Gallo (1995) finds that managers of family firms are older than managers of non-family firms. With regard to the possession of an academic degree Cromie et al. (1995) demonstrate that the management teams in family and non-family firms have a very similar profile. Many researchers (Roberts and Wainer (1986), Ronstadt (1984) and Dyer (1992)) record that entrepreneurs often come from homes where the father or mother was self-employed. Further Cromie et al. (1995), Gallo (1995) and Flören (1998) reveal that in family firms the CEO and the current management teams have significantly longer tenures than in non-family firms. Unlike family managers, managers of non-family firms probably leave as growth slows down over time. The analysis of Cromie et al. (1995) reveals that the management teams in family firms attend significantly less formal training programs than those in non-family firms.

Based on these research results we construct the following hypotheses:

H1: CEOs of family firms are older than CEOs of non-family firms.

H2: CEOs of family and non-family firms have similar educational degrees

H3: CEOs of family firms are more likely to have parents that were self-employed

H4: CEOs of family firms enjoy longer tenures in the firm than CEOs of non-family firms

H5: CEOs of family firms worked less in other companies than CEOs of non-family firms

H6: CEOs of family firms follow less additional training than CEOs of non-family firms

H7: family firms have more female CEOs than non-family firms

Empirical Results

The results concerning the CEO characteristics are shown in table 6. From table 6 we infer the following results. With respect to the age of the CEO both samples reveal that CEOs of family firms are significantly more represented in the oldest age category (> 60 years old) compared to CEOs of non-family firms. This finding is consistent with the literature finding and hypothesis 1 that CEOs of family firms are older than CEOs of non-family firms.

Table 6 Differences between family and non-family firms with regard to CEO characteristics

	S	family firms					non-family firms					p
		N	<35	35-50	51-60	>60	N	<35	35-50	51-60	>60	χ^2+W
age CEO (years)	1	620	10%	55%	27%	8%	129	11%	52%	36%	1%	+++
	2	88	7%	56%	25%	12%	88	11%	58%	30%	1%	++
		N	≤secondary education		higher education		N	≤ secondary education		higher education		χ^2+ W
degree CEO	1	618	35.8%		64.2%		129	10.9%		89.1%		- - -
	2	88	28.1%		71.9%		88	15.9%		84.1%		-

	S	family firms		non-family firms		χ^2 + McN
		N	%	N	%	
% of firms directed by a CEO with self-employed parents	1	624	74.4%	127	39.4%	+++
	2	88	79.8%	88	37.5%	+++
% of firms with CEO that worked in another firm	1	623	51.0%	129	82.9%	+++
	2	88	50.6%	88	84.1%	+++
% of firms with a female CEO	1	613	6.5%	130	1.5%	++
	2	88	8.0%	88	1.1%	++
		N	*mean* std.	N	*mean* std.	MW + W
management training (days per year)	1	592	8.24 21.9	122	14.44 46.47	+++
	2	82	7.12 6.38	84	16.31 55.14	ns
		N	*mean* std.	N	*mean* std.	t + paired t
tenure in the current company (years)	1	619	18.8 9.80	129	11.94 8.08	+++
	2	87	18.9 10.0	87	12.16 7.23	+++

N represents the number of firms that answered the question
ns   : not significant
+ (-)   : significant at the 0.1 level of significance, in line (in contrast) with the hypothesis
++ (--)   : significant at the 0.05 level of significance, in line (in contrast) with the hypothesis
+++ (---):significant at the 0.01 level of significance, in line (in contrast) with the hypothesis
In the first sample tests for random observations are needed: t -, χ^2 - and Mann Whitney (MW) tests.   In the second sample tests for paired observations are needed: paired t -, Mc Nemar (McN) and Wilcoxon signed ranks (W) tests.

Concerning the education of the CEO we find in both samples that CEOs of family firms have lower educational degrees than their non-family counterparts. We thus reject hypothesis 2 that CEOs of family and non-family firms have similar educational degrees. Consistent with hypothesis 3 and the findings in the literature, the two samples demonstrate that CEOs of family firms are more likely to originate from families with self-employed parents than CEOs from non-family firms. Further we persistently find in the two samples that CEOs of family firms work significantly longer in their current firm than CEOs of non-family firms, which is consistent with hypothesis 4. Also hypothesis 5, stating that CEOs of family firms worked to a lesser extent in other companies than CEOs of non-family firms, is

supported in both samples.   In line with hypothesis 6 the first sample reveals that CEOs of family firms follow less additional training than CEOs of non-family firms. In the second sample, however, no significant difference is found. We can thus not confirm hypothesis 6. Finally the results of the two samples show that family firms have significantly more female CEOs. We confirm hypothesis 7.

Strategy and environment

Literature Review

A common typology of strategy is the one presented by Miles and Snow (1978). They distinguish four strategy types: prospector, analyzer, defender and reactor. Prospectors and analyzers are growth- and innovation-pursuing strategy types, while defenders and reactors are rather passive strategy types. With respect to business strategy Donckels and Fröhlich (1991) and Gomez-Mejia, Tosi and Hinkin (1987) find that family businesses follow a rather conservative, less innovative and less growth-oriented strategy compared to non-family firms.

Concerning export orientation Gallo (1993) finds that family firms are less active in global markets. Also the results of Donckels and Fröhlich (1991) show that family firms are less prepared for exporting than non-family firms.

Further, the results of Donckels and Fröhlich (1991) show that family businesses are less involved in socio-economic networks and cooperation with other firms. Also Leach (1991) argues that family members are not disposed to seek the advice of outsiders.

Relating to perceived environmental uncertainty the literature presents ambiguous evidence. Westhead (1997) finds that family firms as well as non-family firms perceive their external environment to be munificent and rich in investment and growth opportunities. Non-family firms, however, are more likely to perceive that they are competing in very stressful and hostile environments in which it is difficult to survive. Family firms rather suggest that the environment is very risky and that a false step can lead to business failure.

We formulate the following hypotheses:

H8: family firms adopt less growth-pursuing strategies than non-family firms

H9: family firms are less export-oriented than non-family firms.

H10: family firms engage less in networking activities than non-family firms.

H11: family firms perceive their environment more uncertain than non-family firms

Empirical Results

The results concerning strategic orientation and export activity are shown in table 7. In the first sample our data reveal that family firms follow less prospector strategies and more defender and reactor strategies in comparison with non-family firms. In the second sample no significant differences are found. Our results do not support hypothesis 8 nor the literature findings that family firms adopt less growth-oriented strategies compared to non-family firms. So, the strategy difference between family and non-family firms, found in prior research and in our first sample, could be due to demographic characteristics of the population.

Concerning the export activity the evidence of both samples is consistent with the literature findings and with hypothesis 9 that family firms export less than non-family firms.

Table 7 Strategy and export differences between family and non-family firms

	S	family firms					non-family firms					p
		N	*P*	*A*	*D*	*R*	N	*P*	*A*	*D*	*R*	χ^2 +McN
strategy	1	586	27%	18%	36%	19%	125	38%	17%	30%	15%	++
	2	82	35%	15%	15%	35%	82	33%	15%	20%	32%	ns
		N	*0-20%*	*21-60%*	*>61%*		N	*0-20%*	*21-60%*	*>61%*		χ^2 +W
export (% of sales)	1	601	74.9%	15.1%	10.0%		125	70.4%	16.5%	13.1%		+++
	2	79	65.1%	21.7%	13.3%		79	51.8%	23.5%	24.7%		++

For a table description: see table 6
P: Prospector, A: Analyzer, D: Defender, R: Reactor

In table 8 we present our findings relating to networking activities. The results of the first sample show that, generally, family firms are less involved in networking activities than non-family firms, which is consistent with hypothesis 10. Family firms, compared to non-family firms are found to be less engaged in contacts with parties like local, national and international entrepreneurs, lawyers, consultants, auditors, external accountants and competitors and to take part less in several activities such as seminars, congresses, specialized fairs, initiatives of industry federations, service clubs, Chambers of Commerce and employer's organizations. The second sample, however, reveals that family firms have more frequent contacts than non-family firms, which is in contrast with our hypothesis. Unlike the unanimous evidence in the literature the two samples reveal ambiguous results. Hypothesis 10 that family firms are less engaged in networking activities is not confirmed.

Table 8 Differences between family and non-family firms with regard to networking

		family firms			non-family firms			p
		N	*mean*	std.	N	*mean*	std.	t +paired t
number of	1	627	4.86	1.93	130	5.61	1.82	+++
contacts (0→8)	2	89	5.28	1.69	89	5.26	1.76	ns
frequency of contacts	1	612	2.33	0.57	130	2.28	0.47	ns
(1:yearly → 4:weekly)	2	89	2.34	0.53	89	2.20	0.46	- -
number of activities	1	627	2.65	1.55	130	3.08	1.61	+++
participated in (0→7)	2	89	2.85	1.74	89	2.89	1.55	ns

For a table description: see table 6

With regard to perceived environmental uncertainty we do not find significant results (table 9). We measured PEU by asking the respondents about the degree of predictability with respect to the following sectors of the external environment: suppliers, customers, competitors, the public, technology, financial markets, government, regulatory agencies and unions. Next, respondents were asked to what extent their external environment offers market opportunities, and is characterized by stability and controllability.

Table 9 Differences between family and non-family firms with regard to PEU

	S	family firms			non-family firms			p
		N	*mean*	std.	N	*mean*	std.	t + paired t
PEU	1	627	2.62	0.6	130	2.6	0.4	ns
(1: low → 5: high)	2	89	2.52	0.5	89	2.6	0.4	ns

For a table description: see table 6

From these questions, which were measured by means of a five-point scale, we developed an overall uncertainty measure computed as the mean of the answers to these questions (Cronbach $\alpha = 0.72$). This variable 'PEU' ranges from 1 (little uncertainty) to 5 (much uncertainty). Table 9 reveals that we cannot support hypothesis 11 that family firms perceive their environment as more uncertain than non-family firms.

Management Information Systems

Literature Review

Family and non-family firms tend to have different approaches to internal management matters. Westhead (1997) finds that family firms are significantly less oriented towards planning-related issues and that they use less formalized management information systems to support decision making. Further Chaganti and Schneer (1994) note that planning is less prevalent in family firms. In general, Lyman (1991) finds that managers of family businesses use a more personal approach and rely less on formal written policies.

With regard to control systems Daily and Dollinger (1992) find that family firms use significantly fewer formal internal control systems. Whisler (1988) claims that control of work processes is more informally organized in family firms. Finally Cromie et al. (1995) find that family firms have significantly less formal appraisal systems than non-family firms. These results can be explained by the family firm's wish to maintain personal, social control instead of using impersonal, formal procedures to follow up personnel behavior and firm processes (Daily and Dollinger,1992).

Based on the previous research results we state the following hypotheses:

H12: family firms rely to a lesser extent on formal planning systems

H13: family firms rely to a lesser extent on formal control systems

H14: family firms use less incentive systems than non-family firms do.

Empirical Results

Table 10 describes the planning practices of family and non-family firms. The variable 'number of formal short-term budgets used by the firm' ranges from 0 to 5, respectively indicating the use of none versus all of the following five formal budgets: sales, production, cost, investment and liquidity. The variable 'number of formal long-term plans used by the firm' varies from 0 to 6, respectively referring to the use of none versus all of the following six formal long-term plans: sales, production, personnel, R&D, investment and financing. A formal budget or plan is defined as a budget or plan that is fully written out and approved of.

Table 10 Differences between family and non-family firms concerning planning practices

	S	family firms			non-family firms			p
		N	*mean*	std.	N	*mean*	std.	MW + W
number of formal budgets used (0→5)	1	627	1.10	1.65	130	2.89	2.02	+++
	2	89	1.78	2.08	89	2.42	2.03	++
number of formal long-term plans used (0→6)	1	627	0.70	1.41	130	1.75	2.11	+++
	2	89	0.91	1.74	89	1.33	1.91	ns

For a table description: see table 6

In the first sample family firms are found to use a significantly smaller number of formal budgets and long-term plans than non-family firms. This is consistent with our hypothesis. In the second sample only the result for budgets, and not for long-term plans, is in line with hypothesis 12. We can thus only confirm hypothesis 12 and the results of previous empirical research for the formal short-term planning systems.

In table 11 the control practices are compared. We compare the number of financial and operational performance indicators used by family and non-family firms. The financial performance indicators comprise 21 ratios measuring profitability, liquidity, solvency and value added. The operational performance indicators include 19 measures assessing the quality of market research, product development, distribution, sales and production. From table 11 we infer that in the first sample family firms use significantly less financial and operational performance indicators than non-family firms. Also in the second sample family firms are found to perform significantly less controls, but only with respect to financial controls. The persistent finding in the literature that family firms perform less controls than non-family firms is thus supported by our evidence, but only with respect to the financial performance indicators.

Table 11 Differences between family and non-family firms with regard to control practices

	S	family firms			non-family firms			p
		N	*mean*	std.	N	*mean*	std.	t + paired t
n° of financial performance	1	627	7.02	3.94	130	8.74	4.37	+++
indicators used (0→21)	2	89	8.18	4.27	89	9.82	4.19	+++
n° of operational performance	1	627	5.09	3.60	130	6.80	4.52	+++
indicators used (0→19)	2	89	5.70	3.91	89	6.27	4.34	ns

For a table description: see table 6

Table 12 reveals the results concerning incentive systems. We distinguish four types of incentive systems: payment of variable rewards to management based on profit versus based on other performance, and payment of variable rewards to other personnel based on profit versus based on other performance. Our two samples reveal that family firms adopt less types of incentive systems than non-family firms. Hypothesis 14 is thus confirmed.

Table 12 Differences between family and non-family firms with regard to incentive systems

	S	family firms			non-family firms			P
		N	*mean*	std.	N	*mean*	std.	t + paired t
types of	1	627	0.59	0.94	130	1.25	1.19	+++
incentive systems (0→4)	2	89	0.75	1.11	89	1.07	1.15	++

For a table description: see table 6

Financing issues, performance and growth

Literature Review

With regard to financing problems a distinction is made between supply-side and demand-side financing problems (Aston Business School, 1991). Concerning the supply side, Bopaiah (1998) finds that lenders tend to give easier credit to family firms compared to non-family firms. One reason could be that family-owned businesses, by definition, have a larger share of insider equity in their capital structure. Therefore they make relatively conservative investment choices and they are better protected against hostile takeovers. Another reason is that family owned firms are able and willing to offer personal collateral. With respect to the demand side, there is more evidence, however, that owner-managers of family firms want to keep the shares within the family and therefore avoid external debt and equity financing (Dunn and hughes, 1995). Furthermore, according to Poutziouris et al. (1997) family firms have a rather limited knowledge of funding sources, and due to their desire for privacy, are hesitant to discuss finances with outsiders. This desire for control, independence and privacy, which leads the family firm to avoid external financing, is less prevalent in non-family firms.

With regard to firm performance Gorriz and Fumas (1996) find that family firms show a greater efficiency level (value added per worker) than non-family firms. Further Gallo and Estapé (1992) and Coleman and Carsky (1999) reveal that family firms respectively have a higher ROE and ROA than non-family firms. Historically however, management theorists considered family involvement as bad for effective business practices, leading to corruption and non-rational behavior (Perrow, 1972; Dyer, 1994). An explanation for the opposite empirical results could be that monitoring costs can be reduced in family firms since family members would likely trust one another. Davis (1982) also suggests that family businesses have a higher level of perseverance and commitment to see the business succeed.

With respect to growth Donckels and Hoebeke (1992) claim that the familial character has a rather restraining influence. Also Gallo (1993) finds that family firms show slower growth. A reason could be that family managers, eager to stay in control, are less growth oriented than non-family firms are. Another explanation is the 'satisficing' approach (consistent with LeCornu et al., 1996) i.e. the perception that the risks associated with growth and financing are excessive in relation to the financial rewards associated with status quo.

On the basis of these literature findings we formulate the next hypotheses:

H15: family firms face more financing problems than non-family firms.

H16: family firms achieve higher levels of profitability than non-family firms.

H17: family firms achieve lower growth levels than non-family firms

Empirical Results

Table 13 presents our results concerning financing problems. We asked the respondents whether or not they had experienced financing problems during the last five years with respect to liquidity, inventory and receivables (short-term financing problems) and with respect to replacement and expansion investments, R&D and market development (long-term financing problems). From this information we computed 'the number of short- term financing problems' and 'the number of long- term financing problems' as the sum of the positive answers (yes) to these questions. From table 13 we infer that the first sample reveals significant results with respect to both short- and long-term financing problems. The second sample only shows a significant result for the long-term financing problems. These results are consistent with our hypothesis. Only the results about long-term financing problems are persistent over the two samples, however. We can thus confirm hypothesis 15 and the majority of prior research, stating that family firms experience more financing problems, but only with regard to long-term financing.

Table 13 Differences between family and non-family firms w.r.t. financing problems

	S	family firms			non-family firms			p
		N	*mean*	std.	N	*mean*	std.	t + paired t
number of short-term	1	621	0.70	0.95	128	0.46	0.75	+ + +
financing problems (0→3)	2	88	0.57	0.81	88	0.52	0.80	ns
number of long-term	1	620	0.46	0.87	128	0.32	0.76	+ +
financing problems (0→4)	2	88	0.52	1.01	88	0.25	0.68	+ + +

For a table description: see table 6

In table 14 we consider the financing sources.

Table 14   Differences between family and non-family firms w.r.t. financing sources

	S	family firms		non-family firms		p
		N	*%*	N	*%*	χ^2 + McN
% of firms that uses	1	441	4.8%	98	10.2%	**
venture capital	2	50	10.8%	50	9.1%	ns
% of firms that uses	1	571	51.1%	116	66.4%	***
leasing	2	82	53.66%	79	65.82%	ns
% of firms that uses issue of	1	517	3.9%	104	8.7%	**
shares for increase of capital	2	59	6.5%	59	4.3%	ns
% of firms that uses	1	602	79.1%	123	70.7%	**
short-term bank financing	2	80	82.4%	80	69.0%	*
% of firms that uses	1	611	78.9%	124	66.9%	***
long-term bank financing	2	81	78.8%	81	68.2%	*

For a table description: see table 4

From table 14 we infer that in the first sample family firms make significantly less use of venture capital, leasing and issue of shares for increase of capital, but that they make more use of short- and long-term bank financing. In the second sample we find that family firms seem to make more use of short-term and long-term bank financing.

Concerning firm performance (table 15) we find that in the first sample the seven-year average ROE proves smaller for family firms than for non-family firms. The second sample shows the opposite result; namely that family firms achieve higher levels of seven-year average gross ROA and gross ROS. The results of the second sample thus support hypothesis 16 that family firms achieve higher profitability levels than non-family firms.

Table 16 demonstrates the results with respect to firm growth. We considered three measures of growth: growth of total assets, of employment and of value added. In the first sample family firms demonstrate a significantly lower six-year average yearly growth of value added than non-family firms. This is consistent with our hypothesis and the literature findings. In the second sample no significant differences are found. Since the second sample is the most appropriate to derive 'real' differences, we cannot support hypothesis 17 nor the literature finding that family firms grow less than non-family firms.

Table 15 Differences between family and non-family firms with regard to performance

	S	family firms			non-family firms			p
		N	*mean*	std.	N	*mean*	std.	MW + W
ROE	1	540	5.12	30.18	105	11.27	24.12	-
	2	80	9.45	20.49	68	7.75	19.07	ns
gross ROA	1	597	16.24	8.71	126	15.09	9.07	ns
	2	86	17.02	8.19	86	15.14	9.32	+
gross ROS	1	204	9.27	7.82	85	9.34	9.49	ns
	2	37	10.31	7.97	50	8.26	5.78	+

For a table description: see table 6

Table 16 Differences between family and non-family firms with regard to firm growth

	S	family firms			non-family firms			p
		N	*mean*	std.	N	*mean*	std.	MW+ W
growth of value added	1	605	8.65 %	16.77	116	13.65 %	27.55	++
	2	85	7.90%	9.61	79	12.76%	24.31	ns

For a table description: see table 6

Conclusion

In this article we examined differences between family and non-family firms in two different subsamples with an increasing degree of elimination of demographic sample differences. Our goal was to find 'real' differences between family and non-family firms. Table 17 presents an overview of our findings and of prior research results. Table 17 enables us to check whether the research sample influences our results, and enables us to assess whether previous research has detected 'real' or 'demographic sample' differences.

Table 17 Summary

Variables	*Hyp*	*Lit*	*Bivariate comparison*	
			Sample 1	*Sample 2*
CEO characteristics				
age CEO	FF > NFF	+	+	+
gender CEO	FF: female	no lit.	+	+
parents CEO self-employed	FF > NFF	+	+	+
educational degree CEO	NFF = FF	+	-	-
n° of days of training	NFF > FF	+	+	ns (+)
experience in current firm	FF > NFF	+	+	+
experience in other firm	NFF > FF	no lit.	+	+
Strategy and environment				
strategic orientation	NFF: growth	+ / ns	+	ns
export activity	NFF > FF	+	+	+
networking	NFF > FF	+	+	- / ns
PEU	FF > NFF	+ / -	ns	ns
Management Information Systems				
planning practices	NFF > FF	+	+	+ / ns
control practices	NFF > FF	+	+	+ / ns
incentive systems	NFF > FF	no lit.	+	+
Financing issues, performance and growth				
financing problems	FF > NFF	+ / -	+	+ / ns
firm profitability	FF > NFF	+ / ns	-	+
firm growth	NFF > FF	+	+	ns

'na'   : not applicable
'ns'   : not significant
'+'   : significant difference consistent with H
'-'   : significant difference in contrast with H
'+/-'   : significant conflicting results
'ns (+)' : not significant, but the direction is consistent with H
'ns (-)' : not significant, but the direction is in contrast with H
'+ / ns' : both significant (in line with H) and non significant results
'- / ns' : both significant (in contrast with H) and non significant results

In discussing our findings and assessing the correctness of prior research findings we will attach most importance to the second sample results. The second sample namely is

characterized by the elimination of 'demographic sample' differences (size and sector) between family and non-family firms, which enables us to filter out the impact of the family dimension. In the first sample none of the sample differences are eliminated.

First we discuss the persistent findings in the literature that are confirmed by our research. Our samples unanimously revealed that family firms export less than their non-family counterparts. Further CEOs of family firms are found to be older, to enjoy longer tenures and to have self-employed parents more often than CEOs of non-family firms. This is consistent with the results found in the literature.

We can also present findings in the literature that were rejected by both samples. Cromie et al. (1995) found that CEOs of family and non-family firms have similar educational degrees. Our samples however unanimously revealed that CEOs of family firms have lower educational degrees than their non-family counterparts.

Then there are persistent findings in the literature for which our two samples yielded ambiguous results. Prior research persistently found that family firms are less involved in networking, planning, control and management training activities compared to non-family firms and that family firms grow less than non-family firms. The literature finding with respect to involvement in networks was only confirmed in our first sample. The second sample showed the opposite result. Concerning the planning practices, the literature finding that family firms are less engaged in formal planning, was only fully supported in the first sample. The second sample did only demonstrate a significant difference consistent with our hypothesis for formal short-term planning. The result for formal long-term planning was not statistically significant. The persistent finding in the literature that family firms perform fewer controls than non-family firms was only fully supported in the first sample. In the second sample family firms were found to perform less financial control, but no difference was found with regard to the use of financial performance indicators. Management training programs were found to be more prevalent in non-family firms compared to family firms in our first sample, which is consistent with prior research. In our second sample, however, no significant differences were found anymore. With regard to firm growth, only the first sample was in line with prior research, showing that family firms grow less than non-family firms. In the second sample, however, the growth difference between both groups of firms was not significantly different. In our opinion, prior research with regard to networking, planning, control, management training and growth differences between family and non-family firms did not detect 'real' differences. Concerning these topics, our first sample always yielded results in line with the prior research findings. Our second sample, which is

free from 'demographic sample' differences, and thus detects 'real' differences, however, could never fully confirm these prior research results. Consequently, with regard to above-mentioned topics, there is reason to believe that prior research detected 'demographic sample' differences rather than 'real' differences between family and non-family firms.

Besides persistent results, the literature also presents ambiguous results. This is the case for strategy, PEU, profitability and for the number of financing problems in family versus non-family firms. Concerning firm strategy most authors claim that family firms follow less growth-oriented strategies than non-family firms, other authors find no significant differences. We also found ambiguous results. In the first sample family firms were found to follow less growth-oriented defender and reactor strategies. In the second sample, however, family and non-family firms were shown to adopt similar strategic profiles. Again we believe that the majority of prior research, claiming that family firms adopt less innovative and less growth-oriented strategies, has detected 'demographic sample' differences instead of 'real' differences between family and non-family firms. With regard to PEU Westhead (1997) finds on the one hand that non-family firms perceive their environment more stressful and hostile, and on the other hand he finds that family firms consider their environment as more risky. Our two samples revealed insignificant results. With respect to profitability most authors find that family firms achieve higher levels of profitability than non-family firms, other authors do not find significant differences. In line with the majority of previous research, the results of our second sample indeed revealed that family firms achieve higher levels of profitability. The first sample showed the opposite result. With respect to financing problems Bopaiah finds that family firms have less (supply-side) financing problems compared to non-family firms. The majority of prior research, however, finds that family firms face more (demand-side) financing problems than non-family firms. Our research confirmed the majority of the literature findings. In both samples we found that family firms face more financing problems than non-family firms, but this statistically significant result was only persistent for long-term financing problems.

Finally we discuss some research results for which no literature was found. All these results were persistent across the two samples. CEOs of family firms worked significantly less in other companies than their non-family counterparts. Further there are significantly more female CEOs in family firms than in non-family firms. Finally family firms make use of incentive systems to a significantly lesser extent than non-family firms.

Future Research

Future research must consider the fact that firm demographics (such as the size of the company and the principal industrial activity) must be controlled for when conducting bivariate studies exploring the discriminating characteristics of family and non-family firms. A 'matched pair' methodology or multivariate statistical techniques should be considered. Only these methodologies will lead to the detection of 'real' differences between family and non-family firms instead of 'demographic sample' differences.

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