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ARE PERFORMANCE DIFFERENCES BETWEEN FAMILY AND NON-FMAILY SMEs UNIFORM ACROSS ALL FIRM-SIZES?

Research Paper

Bernice Kotey
New England Business School
University of New England
Armidale, NSW 2351
Australia
Tel. 61 2 6773 2830 (office)
Fax. 61 2 6773 3148
Email: bkotey@metz.une.edu.au

Dr. Bernice Kotey is Senior Lecturer in the New England Business School at the University of New England, Armidale, Australia. Her research interests cover management and performance issues in SMEs and family businesses, and small business education.

Keywords - profitability, growth, efficiency, liquidity, family firms, small and medium enterprises

ABSTRACT

Purpose
The study examined the impact of firm size on performance (measured as profits, growth, efficiency and liquidity) differences between family and non-family SMEs.

Methodology/Approach
The samples of 441 family and 473 non-family firms were divided into four size groups and performance differences analysed for each size group using MANOVA.

Findings
The findings indicate that family SMEs perform at least as well as non-family SMEs. Although the two types of firms shared several similar performance characteristics at the small level, certain differences were evident. Performance differences between family and non-family SMEs became prominent at the critical growth phase (20-49 employees), reached an optimum at 50 – 99 employees and narrowed again thereafter. For family firms, the benefits of higher gross margins and efficient use of assets began to wane after 100 plus employees but the disadvantages of lower employee performance continued.

Research Limitations
The study could be improved by a longitudinal examination of the same firms across various growth stages. Further, the findings may be industry-specific and not generally applicable.

Practical implications
The findings show that greater resources do not necessary lead to better performance and that non-family firms could benefit from more efficient use of resources. The findings also confirm that the benefits of the informal system are not sustainable at larger firm sizes and that larger family firms would benefit from improved management of employee performance.

Originality/value of paper
The pattern of performance differences observed between family and non-family SMEs is unique to the paper. The paper shows that differences in performance between the two types of firms noted in the literature do no hold at all firm sizes.

INTRODUCTION

Researchers from several countries have noted that the majority of SMEs are family owned (Chua et al., 2004; Gersick et al., 1997; Daily and Dollinger, 1993; Donckels and Frohlich, 1991; Cromie et al., 1995) and that family firms tend to be older but have fewer employees than non-family firms (Chua et al., 2004; Donckels and Frohlich, 1991; Cromie et al., 1995). For the financial year ending June 1996, Australian family firms comprised 62.5% of firms employing 1-4 workers and 61% of firms with 5-9 employees. However, these percentages decreased to 32.5% for firms with 50-99 employees and 26% of firms employing 100–199 workers (Department of Employment, Work Relations and Small Business [DEWRSB], 1998).

The declining number of larger family firms is often attributed to the family proprietor's desire to restrict firm growth in order to maintain control and ownership within the family (Daily and Dolinger, 1993). Consistent with this desire, it is argued that family proprietors tend to be risk averse, preferring an informal and conservative management style and efficiency-oriented strategies (Donckels and Frohlich, 1991; McConaughy et al, 2001). In contrast, non-family firms desire growth and short-term profits in order to attract outside resources and to meet the investment goals of outside owners. Management systems tend to be more formal in non-family firms to enable accountability to outside owners (following the agency relationship that evolves) (Daily and Dolinger, 1993; Kotey, 2005).

Some researchers have argued that the family atmosphere and its informal systems provide unique competitive advantage for family firms (Sirmon and Hitt, 2003). Others attribute the low number of larger family firms to the inappropriateness of informal systems for effective management of growth (Ward, 1997; Loan- Clarke et al., 1999; Harris et al., 2004). These differing opinions reflect the lack of consensus in the literature on performance differences between family and non-family firms. The different findings may be associated with variations in sizes of firms examined. Westhead and Cowling (1997) drew attention to the disparities in size of firms investigated in the family business literature and argued that this might account for the differing findings. Performance of family and non-family firms may vary with firm size such that performance differences between the two types of firms may not be uniform for all firm sizes. Performance differences are likely to be minimal for small firms where family and non-family firms

share similar characteristics but may increase as differences in goals, ownership structure and management between the two types of firms widen with growth.

This paper aims to investigate the impact of size on performance of family and non-family SMEs. This investigation should enhance understanding of the two types of firms and enable assistance programs and advice to be tailored to the unique situation of each firm..

DEFINITIONS

Family Firms

Researchers have suggested the use of multiple conditions to identify family from non-family firms (Litz, 1995). Frequently used conditions include family ownership and control (Litz, 1995; Upton et al., 2001), family influence in decision-making (Sharma et al., 1997), family members as employees (Department of Employment, Work Relations and Small Business [DEWRSB], 1998) and the intent to transfer the family firm to the next generation (Stewart, 2003). Chua et al. (1999) asserted that the ability to sustain the vision of the controlling family members across generations is important to identifying family from non-family firms. However, they added that dominant family ownership and significant involvement of family members in the management of the firm would be sufficient to ensure that the vision of the family is shaped and pursued by the business. In this paper, respondents identified their firms as family or non-family based on the criteria of ownership and control, decision-making, employment of family members and business acquired from parents. In addition, family ownership and family management were verified empirically. These criteria are consistent with those employed in the literature (see for example Upton et al., 2001; Chua et al., 2004)

Small and Medium Firms

In this study firms with up to 199 employees were examined. The sample was based on the Australian Bureau of Statistics' definition that a small firm employs up to 19 workers and a medium firm has between 20 and 199 employees (DEWRSB, 1998).

The paper is organised into five sections. The first section reviews the literature on performance (in terms of profitability, growth, efficiency and liquidity) and ends with the hypotheses to be tested. The second section describes the research methods and the third

presents the results of the analyses, which are discussed in the fourth section. The final section covers the summary and conclusions to the study.

LITERATURE REVIEW AND HYPOTHESES DEVELOPMENT

Profitability and Growth

Daily and Dollinger (1992) argued that, whereas family proprietors aim at long-term value maximisation, managers of non-family firms grow revenue on a short-term basis to satisfy shareholders and to pursue their own personal gains. The authors reported higher sales growth and greater improvement in net margins for family firms compared with non-family firms. McConaughy et al. (1998) also noted that family proprietors have greater incentive to maximize firm value in order to enhance their ownership interest in the firm. In a subsequent study, McConaughy et al. (2001) reported higher market equity to book equity ratios for family controlled firms compared with their non-family counterparts. Oswald and Jahera (1991) supported these findings suggesting that higher levels of family ownership result in higher excess returns. They explained that higher ownership interest in the business motivates family proprietors to make better decisions that lead to higher earnings and dividends. Anderson and Reeb (2003) confirmed these findings, reporting that firms with continued founding-family presence exhibit significantly better accounting and market performance than non-family firms. The authors examined first generation (that is, founder-centred) publicly listed companies. Since market value reflects superior competitive advantage the findings would imply that family firms have better competitive positions than non-family firms. Sirmon and Hitt (2003) argued that the informal systems in family firms constitute unique resources that provide sustainable competitive advantage.

Other researchers have challenged the above views. Schulze et al. (2003) noted that the excess returns generated from family ownership are absorbed by various inefficiencies associated with the family system. Harris et al. (2004) established that family-owned firms were more likely than non-family firms to report average or below average financial performance. Birley (2000) determined that the majority of small family ventures are not motivated to pursue financial objectives and often prefer the status quo. Gersick et al. (1997) reported that two-thirds of first generation family firms do not survive to the second generation of family ownership. DeAngelo and DeAngelo (2000) suggested that families may pursue actions that maximise their personal utility resulting in poorer

performance compared to non-family firms. It is not clear whether these inconsistent findings are attributable to the sizes of firms investigated.

Non-family firms have frequently been reported to grow faster than family firms. Donckels and Frohlich (1991), Daily and Dollinger (1993), Upton and Petty (2000), and Birley (2000) have all professed that family proprietors restrict growth in order to maintain ownership and financial control of the firm within the family. Consistent with this contention, Poutziouris et al (2000) reported lower growth in sales, employment and productivity for family firms compared with their non-family counterparts. Stoy Hayward (1992) noted that a lower proportion of family than non-family firms recorded sales growth in excess of 20 percent. They suggested that the retarded growth was due to inefficiencies associated with the family status. Birley et al. (1999) demonstrated that not all family firms are tuned to growth. Daily and Dollinger (1993) presented three reasons why non-family firms grow at a faster rate than family firms – the need for managers in non-family firms to generate slack resources to cover poor decisions and ensure consistent performance over time; that executive compensation is based on firm growth and size rather than on profitability; and the need to create new opportunities for advancement within the firms. These 'needs' do not feature prominently among family firms, where family proprietors restrict growth or grow the family firm at a pace sufficient to meet the requirements of family members in the business.

A dissenting study by Westhead and Cowling (1997) in which age, location and business activities were controlled showed no significant differences between family and non-family SMEs in absolute sales, employment size, sales and employment growth, productivity and a weighted performance index. Whether the suggested growth needs of non-family firms are sufficient at all sizes to differentiate them from family firms is a question that requires investigation.

Profit and growth differences between family and non-family SMEs may become evident only at certain firm sizes. It is contended that the fear of loosing control and of deteriorating employee welfare reduce the motivations of owner-managers (in both family and non-family small firms) to grow their firms and increase profits (Davidsson, 1989; Timmons, 1999). The literature also indicates that the majority of owner-managers prefer to keep their firms small (Storey, 1994). For firms that grow, the pace may be faster for

non-family than family firms, partly a consequence of the sources from which growth is financed – with family firms preferring internal sources and avoiding external long term debt and equity (Upton and Petty, 2000) which are open to non-family firms. The reliance on external funding and increase in number of non-owner managers in growing non-family firms would call for greater monitoring procedures, formal management practices (to ensure accountability) and pursuit of goals of the external owners (fast growth to increase capital value and short term profitability to increase income). This suggests that any disparities in growth between family and non-family SMEs would increase with firm size, with the former growing at a slower pace in order to maintain long-term control and ownership within the family. Thus for larger firms, differences in goals, ownership control, capital availability and management style would be expected to accentuate differences in profit and growth between family and non-family firms.

Profit and growth disparities between family and non-family firms are likely to become evident in firms with more than 20 employees when the limits of informality become apparent and informal styles of management are stretched (Roberts et al., 1992). Jennings and Beaver (1997) noted that at this size the owner-manager becomes over-extended and needs to delegate responsibility to more professional managers. It is at this '*threshold*' that the need for transition from entrepreneurial management (characterised by centrality of the founder, ad hoc planning and control, an informal structure, basic budgeting practices and loosely defined 'family'-oriented culture) to professional management (involving greater profit-orientation, formal planing, organisation and control programs, sophisticated budgeting techniques and less focus on the individual as leader) becomes apparent (Flamholtz and Randi, 2000).

The above discussions suggest the following hypotheses for profit and growth differences between family and non-family SMEs.

1. There are no differences in profitability between small family and small non-family firms
2. There are no differences in profit and income growth between small family and small non-family firms.
3. Medium non-family firms are more profitable than similar family firms.
4. Medium non-family firms grow at a faster rate than similar family firms.

Efficiency

Family firms are noted to be more cost-efficient than non-family firms. For example Harris et al. (1994) reported higher cost savings in recruitment for family firms. McConaughy (2000) and Romano et al. (2001) found that compensation, interest and agency costs are lower for family firms. They explained that these cost savings arise from the family's management and ownership interest in their firms and their high aversion to debt. Burkart et al (2003) argued that family ownership and control reduce the conflict between majority and minority shareholders and thus minimise agency costs. McConaughy et al. (2001) observed higher cash flow per employee for family controlled firms than for their non-family counterparts. They also noted that cost savings in family firms translated into increased cash flows, which are ploughed back into the business to increase equity holdings of the family and to provide greater resilience in hard times. Schulze et al. (2003) challenged this view arguing that gains in agency and other costs for family firms are offset by costs associated with the altruism of family proprietors, free riding of family members, family conflicts that flow over to the business and inertia. They suggested that family ownership does not necessarily minimise agency costs and in some cases can exacerbate it.

For small firms differences in costs between family and non-family firms may not be significant. The identified areas of cost savings and cost accumulation may apply equally to small family and small non-family firms. For larger firms cost differences between family and non-family firms would become evident following differences in ownership structures and management systems.

In terms of productivity (input-output ratio), family firms have been found to be less efficient than non-family firms. Kotey and O'Donnell (2002) reported lower efficiency levels (scale, technical and allocative) for medium-sized family firms compared with similar non-family firms in the Australian food, beverage and tobacco manufacturing industry. Wall (1998) also reported lower efficiency levels for family firms. He found that family firms did not reach the same production frontier as non-family firms. Although labour costs (compensation and training) are noted to be lower in family than non-family firms (Reid and Adams, 2001) the cost savings are often negated by lower employee output (MacMahon and Murphy, 1999). Dunn (1995) found evidence of overstaffing in family firms and suggested that family firms placed job provision for family members

above achieving optimal performance. Lower efficiency in family firms has also been associated with psychological conflicts such as nepotism, sibling rivalry, autocratic leadership, and the spill-over of family conflicts to the business (Shulze et al, 2003; Dyer and Handler, 1994; Ket de Vries, 1993).

Differences in efficiency between family and non-family firms may also be explained by their use of physical assets and turnover of inventory. In general, small firms have limited access to capital (Ang, 1992) and are managed by their owners (Storey, 1994) who would be interested in ensuring that their limited resources are used efficiently. For larger firms, the limited capital of family firms and the conservative management style of their proprietors imply that physical resources will be maintained at minimum levels and used efficiently (Donckels and Frohlich, 1991). In contrast, non-owner managers of non-family firms tend to accumulate slack resources to cover their inefficiencies (Daily and Dollinger, 1993). Differences between the two types of firms in the use of assets and in inventory levels would be less pronounced in small firms but evident in medium firms. Based on the above, the following hypotheses are developed for testing-

5. Small family firms do not have a cost advantage over similar non-family firms.
6. Costs are lower in medium family firms than in similar non-family firms.
7. Employee productivity is similar for small family and small non-family firms.
8. Employee productivity is higher for medium non-family firms than medium family firms.
9. The efficiency with which assets are used is similar for small family and non-family firms.
10. Medium family firm use assets more efficiently than similar non-family firms.

Liquidity

Higher aversion to risk and preference for internal funds (Upton and Petty, 2000) mean debt levels would be lower in family firms compared to non-family firms. McConaughy et al. (2001) observed that family controlled firms had more working capital per dollar of sales and used less debt, particularly short-term debt, than non-family firms. For small firms, differences in liquidity between family and non-family firms may be blurred by similarities in ownership structure, aversion to external finance and a general lack of access to funds (Davidsson, 1989). Reliance on internal equity in the early stages of the

business is supported by finance theories such as the trade–off theory (Harris and Raviv, 1990), the agency cost theory (Jensen and Meckling, 1976), the finance gap theory (Weston and Brigham, 1981) and the pecking order theory (Myers, 1984). Inadequate internal funds and preference for short-term debt means liquidity would be equally tight for both small family and small non-family firms.

The literature is inconclusive on leverage and liquidity levels of small firms. Norton (1991) noted that in comparison to larger firms, small business owners have greater preference for zero-debt and are unconcerned about leverage. Ang (1992) established that equity is often understated because the use of unpaid labour and personal assets are not disclosed in the business records of small firms. In contrast, Petit and Singer (1985) reported high leverage levels among small firms and Davidson and Dutia (1991) explained that this is usually in the form of short-term debt.

For larger family firms, preference to fund growth from internal funds suggests that they have higher liquidity or working capital since a greater proportion of their current assets will be financed from equity. In contrast, non-family firms may make greater use of external debt, in particular short-term debt (Davidson and Dutia, 1991) to finance growth. The result is that current assets are financed from current liabilities and liquidity would be lower. Higher growth rate for non-family firms would imply relatively larger current assets and current liabilities compared with similar family firms. The above discussion of the literature leads to the following hypotheses:

H11 There are no differences in liquidity between small family and small non-family firms.

H12 Medium family firms are more liquid than similar non-family firms.

METHODOLOGY

Data

Data were obtained from the Business Longitudinal Survey (BLS), a national survey conducted by the Australian Bureau of Statistics (ABS) and presented as a Confidentialised Unit Record File (CURF). Each record in the file contains the main

financial and operating characteristics of an individual firm in each of the financial years 1994-95 to 1997-98.

Sample

The research was based on data for incorporated but independently-owned small and medium manufacturing firms continuing operations in the 1997/1998 financial years. In Australia, the manufacturing sector has been an area of focus in recent years because of its declining contribution to the economy (Mahmood, 2003). For a closer examination of the impact of firm size on performance differences between family and non-family firms, medium firms were divided into three groups based on employee numbers – that is 20 – 49 employees (Group 2); 50 – 99 employees (Group 3); and 100 – 199 employees (Group 4). These categories are similar to those adopted in other studies on SMEs (see for example Loan-Clarke et al, 1999). There were 358 firms in Group 1 (with up to19 employees); 297 firms in Group 2; 178 firms in Group 3, and 81 firms in Group 4.

A relatively large percentage of firms (23%) were from the machinery and equipment manufacturing sector (ANZSIC code 228). Wood and paper product (ANZSIC code 223) and non-metallic mineral product manufacturing (ANZSIC code 226) had the least percentage of firms (4.6% and 4.9% respectively) in the sample. There were no significant differences in industry sector concentration between family and non-family firms in the various groups, nor between firms (family and non-family) in the four groups. Further, a univariate analysis of variance indicated that the level of technological intensity (measured as the ratio of research and development (R&D) expenditure to sales (Erramilli et al., 1997; Dhanaraj and Bearmish, 2003)) was similar for family and non-family firms and for firms in the four groups. Technological intensity was examined because of its possible influence on size of manufacturing firms (Anderson and Tushman, 1990; Buckley and Casson, 1991) and thus on firm performance. The ratio of research and development expenditure to sales was very low (less than 1%) for the majority of firms.

The sample was limited to incorporated independent firms to eliminate the possible effect of legal form and dependence on a parent company on performance. Unincorporated firms and firms which indicated that they are subsidiaries of other companies were excluded from the analyses.

Measurement of Variables

Family and non-family firms were identified by a question, which required respondents to indicate whether or not they considered their firm a family firm. To validate their responses they were asked to indicate (with a 'yes' or 'no' response to five conditions) why they considered their firm a family firm. The five conditions were- family members were – a) working directors in the firm; b) employed in the firm; c) not working but contributed to decisions; d) the firm was acquired from parents; and e) close working relationship between management and employees. All respondents (100%) who considered their firms as non-family provided 'no' answers to all five questions. In comparison, 95.5% of those who operated family firms answered 'yes' to family members as working directors in the firm; 60% to family members as employees in the firm; 9.5% to family members not working but contributing to decisions; 14% indicated that the firm had been passed on from parents and for 28% of family firms the close working relationship between management and staff was indicative of their family status. It appears that respondents who identified their firms as family firms based their selection on more than one criteria, the most common being family members as working directors in the firm. Thus, the sample of family firms met the major criteria for identifying family firms (that is, family ownership and management – Chua et al, 2004). The chi-square statistics examining differences in responses of family and non-family firms to the five questions were highly significant ($p \leq 0.000$). In addition, a multivariate comparison of family and proprietors' ownership interests in the firm and number of managers outside the family indicated that family members and proprietors had more equity in firms classified as family than the non-family firms (table I). Further, the number of non-owner managers was fewer for family firms than for non-family firms.

In the literature performance is measured by either subjective or objective criteria. Arguments for subjective measures include difficulties with collecting quantitative performance data from small firms and unreliability of such data resulting from differences in accounting methods used by firms (Kotey and Meredith, 1997). However, Delaney and Huselid (1996) noted that since subjective measures of performance are based on the owner or manager's perception, they increase the possibility of measurement error and the potential for bias. Objective performance measures employed in the literature include profit growth, cash flow, earnings, net earnings per dollar of assets employed, capital productivity, capital output ratio, rate of return on investment, revenue growth,

expense/revenue ratio growth, total assets and employment (Kent, 1994). Profit is a commonly used objective measure of performance as it is seen as an overriding business goal (Kent, 1994; Thomas and Evanson, 1987; Chowdhury and Lang, 1993). Both absolute and relative profit values are used (Thomas and Evanson, 1987; Kean et al., 1998), although relative measures are preferred because they take account of the scale of business (Rue and Ibrahim, 1998; Kean et al., 1998; Chowdhury and Lang, 1993; Kent, 1994). Performance is also measured in terms of growth. Examples of growth measures include changes in profit and sales (Kent, 1994). Growth or the lack of it provides an indication of improvement or impairment to financial performance (Kent, 1994).

In this study performance was measured in terms of profit and growth. These measures provide indications of the firms' contribution to economic development, the fundamental basis for research interest in SMEs – (Kotey and Meredith, 1997). It is expected that with the large sample sizes variations in profit and growth among firms, arising from differences in accounting methods employed, would be minimised. The determinants of profit and growth – efficiency and liquidity (Pierson et al., 1998) were also examined for greater understanding of any observed differences in profits and growth between family and non-family firms. Efficiency measures indicate how effectively resources have been used to generate output whilst measures of liquidity reflect cash flow position, which is critical to profitability, particularly in SMEs (Timmons and Spinelli, 2004). Tight liquidity positions and inadequate working capital could adversely affect performance of a highly profitable firm.

There were four measures of profitability – return on equity (ROE); return on total assets (ROA); net and gross margins. Growth in total income and in profits was examined. Growth was measured as changes in income and profits over a 3-year period, that is, between the financial years 1994/1995 and 1997/1998. Efficiency was measured by asset turnover, stock turnover and sales per employee. Sales were used as surrogates for output (in measuring employee productivity), as production volumes were not available in the dataset. Other researchers have adopted a similar measure for productivity (see for example Westhead and Cowling, 1997). Measures of liquidity include current and acid test ratios and working capital per dollar of sales.

Analytical Techniques

Multivariate analyses of variance (MANOVAs) were used, with ownership type and firm size as fixed factors, to examine performance differences between family and non-family firms in the four groups. Bonferroni adjustments were made for multiple comparisons to limit type 1 error and Tukey tests were used as post-hoc adjustments for the size comparisons. The effect of variables such as technological intensity, ownership regime, intergenerational influence (that is, variables that do not directly address the hypotheses but which could impact on performance differences between family and non-family firms) were either examined separately or excluded from the analytical model and included as a limitation to the study. This approach was considered more reliable than using Multivariate analysis of covariance (MANCOVA) with the above variables as covariates, because some of the sub-samples (example family firms in Group 4) were very small.

Sample Characteristics

There were 441 family (FF) and 473 non-family (NFF) firms in the overall sample, divided among the various size groups as follows– Group 1 (195 FF; 163 NFF); Group 2 (150 FF: 147 NFF); Group 3 (76 FF; 102 NFF); Group 4 (20 FF; 61 NFF). The multivariate results indicated significant differences between family and non-family firms with respect to employee numbers, age of the business, ownership interest and number of non-owner managers. The Wilks Lambda statistics were (Wilks Lambda = 0.83; F = 27.02; DF = 7; 906 and Sig. = 0.000).

Take in Table I

Non-family firms had more employees but were younger than their family counterparts consistent with the findings of Chua et al. (2004). Family firms had more working proprietors but fewer non-owner managers compared with non-family firms. Equity interests of proprietors and non-working family members in the firm were greater for family firms than for non-family firms (table I). In contrast, the percentage of equity supplied by owners outside the family was smaller for family firms than for non-family firms although at a lower significant level.

RESULTS OF ANALYSES

Comparisons of Income, Costs, Assets and Capital Between Family and Non-Family SMEs

For a better understanding of performance differences between family and non-family firms in the various groups, differences in resources (assets), capital (equity and liabilities), income and costs (wages, interest and cost of sales) between the two types of firms were examined. Results of the multivariate F-tests for the four MANOVAs were significant at $p \leq 0.05$ for Groups 2 and 3 but not Groups 1 and 4 (table II). This indicates that differences in assets, capital, costs and income between family and non-family firms are most pronounced for firms with 20–99 employees.

Take in Table II

The mean values were higher for non-family than family firms in all groups. However for Group 1 the differences between family and non-family firms were not significant except for wages per employee ($p=0.044$), total liabilities and sales per employee ($p=0.07$), which were lower for family than for non-family firms (table III). For firms in Group 2, the higher resources, capital, output and costs of non-family firms compared with family firms were more prominent and differences were significant for all variables at ($p \leq 0.01$) except interest expense, which was higher for non-family firms at ($p=0.08$). In spite of the greater resources of non-family firms employee numbers were similar to family firms.

Take in Table III

The gap in resources, capital, output and costs widened between family and non-family firms in Group 3 although employee numbers were similar. The greater variability (see standard errors) among family firms in Group 4 was probably due to the small sample size and may explain the lack of significant differences in resources and capital (total assets, total liabilities and equity) between non-family and family firms in this group. However, current liabilities ($p=0.04$) and income ($p=0.05$) were greater for non-family than family firms in Group 4. In addition, cost of sales ($p=0.10$), wages ($p=0.08$), current assets ($p=0.08$) and sales per employee ($p=0.06$) were lower in family than non- family firms in this group.

Comparisons Across Groups (Sizes) for Family and Non-family Firms

For family firms, all resources, capital, output and costs increased significantly across the four groups at $p \leq 0.005$. However, sales per employee remained similar for all groups and wages per employee increased significantly only between family firms in Groups 1 and 3. This growth pattern was similar for non-family firms – that is assets, capital, output and costs increased significantly across the groups at $p \leq 0.005$ with the following exceptions –

- interest expense was similar for non-family firms in Group 3 and 4 but greater for non-family firms in Group 2 than those in Group 1 at ($p=0.05$);
- total liabilities increased between non-family firms in Groups 1 and 2 at ($p=0.067$);
- the increase in current liabilities between non-family firms in Group 1 and Group 2 was not significant but non-family firms in Group 4 had more current liabilities than those in Group 3 at ($p=0.03$);
- equity increased between non-family firms in Groups 1 and 2 at ($p=0.04$); and
- sales and wages per employee were similar for all four groups of non-family firms.

Results of Hypotheses Tests

The multivariate results for performance differences between family and non-family firms in the four groups were significant at $p<0.05$ for Group 3 only (table IV) indicating that differences in performance between the two firms were most evident at this stage.

Take in Table IV

There were no differences between family and non-family firms in Group 1 in any of the profitability and liquidity measures. However, in terms of efficiency, the asset turnover ratio was higher for non-family than family firms at ($p=0.055$). There were no significant differences in performance between family and non-family firms in Group 4 except that the ratios of interest and wages to sales were higher for family than for non-family firms at ($p=0.065$) and ($p=0.017$) respectively.

Take in Table V

Gross margins were higher for family than non-family firms in Groups 2 and 3. There was a reversal of efficiency in Group 2 with family firms making more use of their assets than non-family firms. Further, inventory was turned over faster for family firms than non-

family firms in Group 3. Family firms in Groups 2 and 3 spent a greater percentage of their sales on wages than did similar non-family firms (table V). Although the current ratio was higher for non-family firms in Group 3 at (p=0.10), indicating that they were in a better liquid position than family firms, the two firms had similar working capital for each dollar of sales. All other performance variables were similar for the two ownership types in Groups 2 and 3.

Differences among the various groups were examined separately for family and non-family firms. The following observations were made for non-family firms –

- Gross margins decreased between Groups 1 and 2 and Groups 1 and 4 both at p=0.03, and between Groups 1 and 3 at p=0.000.
- For efficiency, asset turnover was higher in Group 1 than in all other groups at p=0.000. Inventory turnover declined between Groups 1 and 3 and Groups 1 and 4 both at p=0.005; and also between Groups 2 and 3 at p=0.09. Wages as a percentage of sales was significantly higher in Group 1 than in all other groups at p $\leq$ 0.005 and the decrease between Groups 2 and 3 was significant at p=0.045
- Acid test ratio decreased between Groups 1 and 4 at p=0.058.
- All the other performance measures were similar for the various pairwise comparisons.

For family firms, gross margins and assets turnover decreased between Groups 1 and 3 at p=0.07 and p=0.005 respectively. The ratio of wages to sales decreased between Groups 1 and 3 at p=0.05. All other pairwise comparisons for the performance measures were similar.

Profitability and Wages

The literature draws attention to differences in management compensation and wages between family and non-family firms (Schulze et al., 2003; McConaughy, 2000; Cromie et al., 1995; Donckels and Frohlich, 1991). In consonance with these researchers this study shows that wages per employee (which includes directors' remuneration) was lower in family than in non-family firms (table III). Since directors' remuneration constitute part of the return to owner-managers in private-closely held firms it is appropriate to add it to profits in ascertaining returns from operations. However, it was not possible to isolate the

value of directors' remuneration from total wages (in the dataset, wages include directors' remuneration). Separate analyses were therefore carried out to assess differences between family and non-family firms in returns to owners and employees (i.e. internal stakeholders). The values for wages were added to profits in analysing differences in profit margin and returns on assets and equity between the two types of firms (table VI).

Take in Table VI

Profit margins and returns on asset and equity were similar for family and non-family firms in Groups 1 and 4. However, return on assets was greater for family than non-family firms in Group 2 and family firms in Group 3 earned a higher profit margin than their non-family counterparts.

Pairwise comparisons of the four groups were carried out separately for the two types of firms. For non-family firms the results showed a significant decrease between Group 1 and the other groups on return on assets ($p=0.000$). Profit margins also decreased between Groups 1 and 3 ($p=0.001$) and between Groups 2 and 3 ($p=0.068$). Return on equity was lower for non-family firms in Group 3 than those in Group 1 at ($p=0.037$). Family firms experienced a decline in return on assets and profit margins between Groups 1 and 3 at $p=0.004$ and $p=0.04$ respectively.

Growth

Growth differences between the two types of firms were also assessed separately. The samples for this analysis covered firms in existence from 1994/95 to 1997/98 and growth over the three-year period was investigated. There were no differences in growth (both income and profits) between family and non-family firms in all four groups. There were large variations in growth among family and non-family firms in each group as shown by the large standard errors.

Take in table VII

DISCUSSIONS

Performance differences between family and non-family firms with less than 20

employees were minimal but widened for firms with 20 – 99 employees. Family firms in the latter group enjoyed higher gross margins than their non-family counterparts. However, a relatively higher wages to sales ratio for family firms eroded the gross margin advantage bringing their net profit margins and returns on assets and equity in consonance with non-family firms in the same group. Family firms with 20-49 employees demonstrated greater efficiency in their use of assets whilst inventory was turned over faster for family firms with 50-99 workers compared with similar non-family firms. Performance differences between the two types of the firms narrowed for firms with 100-199 employees as the advantages of higher gross margin and efficient use of assets became lost to family firms whilst the disadvantages of higher wages to sales persisted.

Profitability

The results confirm that there are no differences in profitability between small family and small non-family firms (hypothesis 1) but the notion that medium non-family firms are more profitable than similar family firms (hypothesis 3) is not supported.

A. Gross Margins

Consistent with the similarities in income and costs (table III), there were no differences in gross and net margins between family and non-family firms with less than 20 employees. The higher gross margins of family firms with 20-99 employees indicate lower cost of sales and/or higher sales prices than for similar non-family firms. Close relationships with suppliers (Ket de Vries, 1993) may enable family firms to obtain resources at lower costs. Similarly better customer service through intimate knowledge of customers may allow family firms to charge premium prices for their products. It is important to note that the differences in gross margins occurred only after 19 employees. This implies that at the small level both family and non-family firms enjoy similar competitive advantages in terms of cost and/or price. The niche strategy at this stage enables both types of firms to benefit from lower costs and higher prices associated with close relationships with suppliers and customers and with provision of unique products/services (Kotkin, 2000). This advantage is lost to both types of firms with growth as evidenced by the declining gross margins with increasing firm size. However, this loss appears more rapid for non-family than for family firms.

A strategy of mass production and market penetration associated with a higher growth rate

(shown by the relatively larger income and costs) may require non-family firms to reduce prices. Growth also erodes the unique services to and close bond with customers that allow small non-family firms to earn premium prices for their products. Further, the close bond with suppliers may be lost as the growing non-family firm seeks more suppliers to meet its input needs. In contrast, the lower output levels (relatively lower income and costs) of family firms with 20-99 employees enabled them to continue to nurture relationships with customers and suppliers to the firms' benefit. This advantage was lost to the larger family firms (more than 99 employees) as growth and intensified competition absorbed the cost and price advantages and gross margins improved for non-family firms (perhaps a learning curve effect).

B. Net Margins

Similar net margins between the two types of firms in all four groups confirm similarities in performance at the small level (hypothesis 1) and indicate that the gross margin advantages enjoyed by family firms with 20-99 employees were absorbed by higher operating expenses. The higher ratio of wages to sales for family firms with more than 19 employees and higher interest cost for family firms with 100-199 employees compared with similar non-family firms (table V) are in contrast with the contention that costs are lower in medium family firms than in similar non-family firms (hypothesis 6) and contradict the findings of Harris et al. (1994), McConaughy (2000), and Romano et al. (2001). Although employees were paid less in family than in non-family firms, the savings in wages were eroded by lower sales per employee, leaving family firms with higher overall labour costs. This is consistent with the suggestions of MacMahon and Murphy (1999).

A higher net margin for family firms with 50-99 employees (when wages are added to profits) compared with similar non-family firms confirm that wages largely account for the depletion in gross margins of family firms. This implies that internal stakeholders enjoy higher returns in medium-sized family firms than in similar non-family firms, again refuting hypothesis 3. It appears that medium-sized non-family firms did not gain any advantages in profitability from their relatively larger resources, capital and output. In contrast, the resource- and capital-deprived family firms were able to earn higher profit margins for internal stakeholders. When wages and directors' remuneration are included with profits, the findings confirm those of Anderson and Reeb (2003) that family firms

perform better than non-family firms and support the notion that non-family CEOs generate similar (or less) profits at higher salaries than family CEOs (McConaughy, 2000). Nevertheless, the findings also show that employees in medium-sized family firms produce less (sales per employee) for their wages than those in similar non-family firms. This concurs with Dunn's (1995) and Gersick et al.'s (1997) suggestion that family firms place employee wellbeing ahead of financial objectives. In contrast, optimal employee performance is required to achieve the short-term revenue growth goals of non-family firms (Daily and Dollinger, 1992)

C. Return on Assets

Similar return on assets (with or without wages added to profits) for family and non-family firms with less than 20 employees further confirm that there are no differences in profitability between small family and small non-family firms (hypothesis 1). For medium-sized firms return on assets was similar for the two types of firms when wages were excluded from profits, but higher for family than non-family firms with 20-49 employees when wages were added to profits. This finding also refutes hypothesis 3 that medium-sized non-family firms are more profitable than their family counterparts. It strengthens the contention that medium-sized family firms are able to generate higher returns for internal stakeholders (owners and employees) with fewer resources compared with similar non-family firms (McConaughy, 2000).

D. Return on Equity

Return on equity (with or without wages added to profits) was similar for family and non-family firms in all four groups, further confirming superior performance for the resource-deprived medium-sized family firm. Large variations (standard errors) in return on equity (when wages were added to profits) for both family and non-family firms may explain why the relatively higher return on assets and net margins for family firms with 20-49 and 50-99 employees respectively did not result in higher returns on equity, in spite of similarities in equity ratios for the two types of firms (table V).

It could be that greater competition obliges family firms that survive to the 100-199 employee size to adopt similar strategies (mass production and market penetration) to their non-family counterparts in order to remain in the market. Thus, competitive strategies at the larger size may erode the cost and profit advantages enjoyed by family firms in the 20-

99 employees group.

Growth

There were no differences in growth between small family and small non-family firms (hypothesis 2). This is consistent with the literature, which suggests a widespread reluctance among owner-managers (family and non-family) to grow (Davidsson, 1989; Storey, 1994; Poutziouris et al, 2000) and point to similar characteristics for firms at this size.

There were no observable differences in growth (profits and income) between medium-sized family and non-family firms, refuting hypothesis 4. The short time span (3 years) over which growth was examined may explain this finding. Analyses of differences in income indicate that non-family firms with more than 19 employees had greater income than similar–sized family firms (table III). This means non-family firms were relatively larger than their family counterparts and concurs with the findings of other researchers (Donckels and Frohlich, 1991; Daily and Dollinger, 1993; Chua et al., 2004). Hambrick and Crozier (1985) cautioned that rapid expansion could be very risky and often leads to dilution of control as the management team is extended and equity ownership broadened. This description concurs with the characteristics of medium-sized non-family firms presented in table I.

Efficiency

A. Costs

Family firms with less than 20 employees did not have any cost advantages over similar-sized non-family firms (hypothesis 5), but wage and interest costs (in relation to sales) were higher for medium-sized family firms than similar non-family firms. This refutes hypotheses 6 - that costs are lower in medium-sized family than similar non-family firms. However, higher gross margins mean family firms with 20-99 employees enjoyed lower cost of sales than similar non-family firms. The savings on cost of sales were absorbed by higher wage costs leaving medium-sized family firms at par with their non-family counterparts with respect to net margin and returns on assets and equity. The findings contradict those of McConaughy (2000) and Romano et al (2001) who argued that family proprietors avoid debt and thus have lower interest expense compared with their non-family counterparts. That there were no differences in interest expense between the two

types of firms at the 100-199 employee-size (table III), may support the proposition that family proprietors are willing to use more debt when market growth rates are high (Schulze et al., 2003). At this size total liabilities were similar for the two types of firms although income was lower for family firms than non-family firms.

The findings in relation to wages contradict those of Reid et al. (2001) that labour costs are lower in family than non-family firms. For non-family firms the declining ratio of wages to sales as firms increased in size is indicative of improvements in labour efficiency, consistent with their growth goals.

B. Employee Productivity

Sales per employee were lower for family than non-family firms in all four groups. This refutes hypothesis 7 that employee productivity is similar for both types of firms at the small level but confirms hypothesis 8 that employee productivity is higher for medium-sized non-family firms than similar family firms. For family firms lower sales per employee increased their labour costs even though employees were paid less than in non-family firms. These findings concur with those of Kotey and O'Donnell (2002) that technical efficiency is higher in non-family than family firms.

C. Asset and Inventory Turnover

Assets were used more efficiently in small non-family firms than in similar family firms refuting hypothesis 9, that small family and small non-family firms exhibit similar efficiency levels in the use of assets. The situation reversed for firms with 20-49 employees where family firms achieved higher turnover of assets than non-family firms (hypothesis 10) although this advantage was lost when family firms increased in size. A higher inventory turnover ratio for family firms with 50-99 employees compared with their non-family counterparts also supports hypothesis 10 that medium-sized family firms use assets more efficiently than similar non-family firms.

For medium-sized firms, the findings are consistent with the efficiency-orientation of family firms and the conservative management style of their proprietors (Donckels and Frohlich, 1991). As non-family firms expand they tend to build slack resources to cover their inefficiencies (Daily and Dolinger, 1993) reducing the efficient use of assets observed for small firms. This is supported by the declining asset and inventory turnover

ratios across the range of firm sizes, particularly for non-family firms. Timmons (1999) encouraged firms to bootstrap arguing that access to and abundance of resources often result in their inefficient use with possible adverse effects on performance. From the study, bootstrapping is evident in family firms but not non-family firms.

Liquidity

The current and acid test ratios, and working capital to sales were similar for small family and non-family firms confirming that there are no differences in liquidity for small-sized firms (hypothesis 11). The current and acid test ratios continued to show a healthy liquid position for both family and non-family firms with 20-49 employees. This indicates a tendency to finance initial growth with more permanent capital, and is inconsistent with the preference for short-term debt among small firms observed by earlier researchers (Davidson and Dutia 1991). It appears that non-family firms with 50-99 employees enjoyed a healthier liquid position than their family counterparts, although this was probably due to their higher inventory levels, as acid test ratios were similar for the two types of firms. These findings refute the notion that medium-size family firms are more liquid than similar non-family firms (hypothesis 12). The findings confirm the suggestion that family proprietors would use more debt when market growth rates are high (Schulze et al, 2003). There was no difference in liquidity positions for firms with 100-199 employees. Despite the difference in current ratio for medium-sized family and non-family firms, working capital to sales was similar for all the four groups indicating that for both firms, working capital was commensurate to the level of activity undertaken for the size of the firm.

SUMMARY AND CONCLUSIONS

Although small family and non-family firms shared several similar performance characteristics differences were still evident. Employee wages and activity levels were lower in small family than non-family firms, reflecting the family firm's greater emphasis on job provision and well being of family members and employees over short-term profit. Debt levels were also lower for small family firms portraying the risk aversion of family proprietors. Small family firms made less efficient use of their assets than similar non-family firms, due perhaps to their lower activity levels.

Disparities in resources, capital, income, costs and performance between the two types of ownership became prominent at the critical growth stage – 20 or more employees, reaching a peak at 50-99 employees and declining thereafter. These disparities conform to the different goals of the two types of firms - rapid growth and short-term profits for non-family firms; and long-term profit- and value maximisation, and family and employee well being for family firms. Family firms grew slowly and cautiously, using the advantages of their smallness (i.e. close relationship with suppliers and customers and unique products/services) to compete effectively and earn similar returns as non-family firms.

Differences in resources and performance between medium-sized family and non-family firms could also be attributed to differences in capital sources, ownership and management structures and strategies. To maintain ownership within the family, family proprietors resort to the relatively scarce internal sources to fund growth placing a limit on growth rate. In contrast, access to capital from external sources allows non-family firms to acquire more resources and to grow faster. The relatively short-tenured non-owner managers of non-family firms are interested in performance measures that make them look good to the external owners (short-term profit and high growth rates) so they can maximise their personal gains (high compensation and increased tenure). There is a learning curve associated with managing a firm unfamiliar to the incumbent. Thus, non-owner managers accumulate resources to provide adequate buffer and mask mistakes made during the learning process. Familiarity with business operations from an early age or from the onset of the firm enables owner-managers of family firms avoid the learning mistakes of non-owner managers, operate efficiently with fewer assets and achieve similar returns to the greater resourced non-family firms.

Mass production and market penetration strategies associated with rapid growth mean non-family firms lose the advantages of smallness from an early growth stage. However, the loss in gross margin is made up by lower labour costs in relation to sales, achieved by greater attention to employee productivity. For family firms, slower growth means the advantages of smallness are stretched over a longer period. Nevertheless, greater emphasis on employee wellbeing to the detriment of their performance means the gains in gross margins are absorbed by relatively higher labour costs.

The advantages of smallness begin to diminish when family firms reach 100 or more

employees and face greater competitive pressures. Their gross margin advantages decrease but the disadvantages of lower activity per employee and thus higher labour costs remain. Further, the pressures of funding growth from internal sources become apparent as increased debt at lower activity levels raises the interest burden for family firms compared with non-family firms.

In summary, the findings mirror those of Anderson and Reeb (2003) that family firms perform at least as well as non-family firms and that initially performance increases with increasing family ownership up to an optimum and decreases thereafter. Similarly this study shows that there is a limit to the activity levels at which family firms can sustain and benefit from their informal relationships and management practices as well as from limiting capital to internal sources. For family firms the costs associated with the informal system begin to outweigh the benefits at 100 or more employees. The findings also show that greater access to capital and resources do not provide a competitive advantage for non-family firms.

Implications

The issue for family firms is how to maintain an effective balance between the benefits of the informal system and effective management of resources (in particular labour) as firm size increases. Emphasis on the wellbeing of family members and employees to the detriment of their productivity may lead to the demise of family firms. This may explain why only a few family firms survive to the second generation (Gersick et al 1997). Family firms have little choice but to address productivity issues if they wish to continue to cater for the welfare of family members. To address this problem, Sirmon and Hitt (2003) and Anderson and Reeb (2003) propose an increase in the heterogeneity of top management team, through hiring non-family managers, encouraging family members to work for other firms, using outside boards and/or through alliances with other firms. These measures should increase the level of objectivity in management of family firms and help address the productivity problem.

Inefficient use of physical resources in non-family firms may be difficult to monitor, as it may be associated with the inexperience of new managers. Competitive pressures, the market for managers, and the increased learning of incumbents over time, may force and enable non-family firms to improve the efficiency with which resources are used. Further,

inefficient use of physical resources may be offset by greater attention to employee productivity. Nevertheless, non-family firms would benefit from bootstrapping strategies that enable them earn more with less.

Limitations and Future Research

Firms examined in the various groups are not the same. Inferences about progression from one size stage to another are thus weak. A longitudinal study of performance differences between family and non-family firms as they progress through various size stages should complement the findings of this research. Director's remuneration could not be isolated and added back to profits in examining differences in profit and returns to owners between family and non-family firms. This should be taken into account in future research. Family firms were examined as one entity although the literature indicates that there are different types of family firms and different ownership regimes (Dunn, 1995; Basu, 2004; Birley, 2000; Chua et al, 2004). Further, although family firms were differentiated from non-family firms based on several criteria it must be noted that at the small and medium level the two firms are not at the extreme ends of the family-non-family continuum but have varying degrees of family ownership (Chua et al, 2004). In addition the samples of family and non-family firms are not homogenous sets as firms within each sample may vary in degree of family involvement. These factors should be considered in interpreting the findings. Growth could be examined over a longer period of time for a more robust investigation of differences between the two types of firms. Finally, the findings may be specific to the manufacturing industry may not be generalised for all industry sectors. Future research may assess the application of the findings in this study to the service industry where SMEs abound.

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Table I: Characteristics of the Samples of Incorporated Independent Family and Non-family Firms

	Mean and standard error			
Variable	**Non-Family N=473**	**Family N=441**	**F-value**	**Sig (2-tailed)**
Working proprietors	1.4 (0.06)	2.0 (0.06)	49.44	0.000
Non-family managers	4.0 (0.2)	2.6 (0.2)	30.46	0.000
Total employees	47 (1.78)	33 (1.84)	29.46	0.000
Age	8.09 (0.21)	9.7 (0.22)	28.71	0.000
% of equity from working owners	47 (2.0)	73 (2.05)	79.9	0.000
% of equity from non-working family	4.3 (0.92)	8.7 (0.95)	11.07	0.001
% of equity from proprietors and family	51.4 (1.95)	81.3 (2.02)	114.04	0.000
% of equity from non- working non-family owners	2.8 (0.5)	1.5 (0.52)	3.24	0.072

Table II: Multivariate Tests(b) for Differences Between Family and Non-family Firms in Assets, Capital, Income and Costs – Values for Wilks' Lambda

Groups	Value	F	Hypothesis df	Error df	Sig.
1 (< 20 employees)	0.959	1.356(a)	11	349	0.192
2 (20-49)	0.907	2.657(a)	11	287	0.003
3 (50-99)	0.863	2.397(a)	11	166	0.009
4 (100-199)	0.884	0.825(a)	11	69	0.616

a Exact statistic
b Design: Intercept+fambus

Table III: Descriptive Statistics and Differences in Assets, Capital, Income and Costs for Family and Non-family firms in the Four-size Groups (in'000 of dollars)

Variable/ Group	Group1 (< 20) Mean (std error) NFF=163 FF=195	Group 2 (20-49) Mean (std error) NFF=147 FF=150	Group 3 (50-99) Mean (std error) NFF=102 FF=76	Group 4 (100-199) Mean (std error) NFF=61 FF= 20
	Small Firms	**Medium Firms**		
Income - NFF	1588.32 (152.87)	7020.95 (491.63)	21816.31 (1500.52)	33491.31 (2904)
Income – F	1451.4 (139.77)	4808.6 (486.68)	12000.54 (1738.34)	21831.1 (5071.6)
Difference and Sig	136.92 (0.51)	2212.35 (0.002)	9815.77 (0.000)	11660.21 (0.049)
Cost of sales- NFF	798.65 (100)	3868.29 (338.5)	12701.35 (1115.72)	17620.41 (1803.59)
Cost of sales – F	671.27 (91.43)	2346.51 (335.1)	6463.07 (1292.55)	11497.30 (3149.84)
Difference and Sig	127.38 (0.35)	1521.78 (0.002)	6238.29 (0.000)	6123.11 (0.096)
Wages - NFF	307.01 (16.44)	1090.88 (35.98)	2788.59(97.47)	4997.16 (225.09)
Wages – F	278.28 (15.03)	953.11 (35.62)	2214.76 (112.92)	4184.250 (393.09)
Difference and Sig	28.72 (0.2)	137.77 (0.007)	573.83 (0.000)	812.91 (0.077)
Interest expense NFF	12.69 (1.7)	97.92 15.1)	277.04 (35.39)	341.71 (53.64)
Interest expense F	13.07(1.55)	60.51 (15.02)	169.76 (40)	343.35 (93.67)
Difference and Sig	-0.38 (0.87)	37.41 (0.081)	107.28 (0.049)	-1.64 (0.99)
Total assets - NFF	1027.56 (133.24)	5168.88 (454.95)	15069.92 (1256.8)	24393.59 (2572.5)
Total assets– F	791.33 (121.8)	2808.5 (450.38)	7370.71 (1456)	16660.25 (4492.7)
Difference and Sig	236.24 (0.19)	2360.38 (0.000)	7699.21 (0.000)	7733.34 (0.14)
Current assets - NFF	601.71 (84.07)	2839.71(204.56)	8634.67 (825.08)	11683.9 (1143.46)
Current assets – F	493.4 (76.86)	1552.54 (202.5)	4060.93 (955.85)	7580.3 (1996.97)
Difference and Sig	108.3 (0.34)	1287.17 (0.000)	4573.73(0.000)	4103.6 (0.078)
Total liabilities - NFF	600.33 (77.76)	2732.1 (322.68)	8665.33 (925.44)	12970.89(1460.44)
Total liabilities – F	407.82 (71.1)	1439.11 (319.43)	3947.43 (1072.12)	9896.95 (2550.54)
Difference and Sig	192.51 (0.07)	1292.99 (0.005)	4717.9 (0.001)	3073.94 (0.3)
Current liabilities- NFF	407.5 (67.85)	1612.35 (120.14)	5971.16 (791.86)	8509.98 (940.75)
Current liabilities – F	283.49 (62.03)	908.19 (118.93)	2756.71 (917.36)	4505.5 (1642.95)
Difference and Sig	124.01 (0.18)	704.15 (0.000)	3214.45 (0.009)	4004.48 (0.038)
Equity - NFF	427.23 (65.85)	2436.79 (216.28)	6404.59 (651.76)	11422.71 (1667.44)
Equity – F	383.51 (60.21)	1369.39 (214.1)	3423.28 (755.06)	6763.3 (2912.05)
Difference and Sig	43.73 (0.62)	1067.4 (0.001)	2981.31 (0.003)	4659.41 (0.17)
Employees -NFF	9.7 (0.4)	32.31 (0.67)	71 (1.4)	140.6(3.4)
Employees – F	9.5 (.36)	32.04 (0.66)	68.5 (1.6)	132 (5.9)
Difference and Sig	0.2 (0.76)	0.26 (0.78)	2.5 (0.23)	8.5 (0.22)
Wages/employee - NFF	34.92 (2.6)	33.68 (0.9)	39.24 (1.15)	35.94 (1.5)
Wages/employee – F	27.73 (2.4)	29.8 (0.9)	32.18 (1.33)	31.62 (2.66)
Difference and Sig	7.2 (0.044)	3.9 (0.002)	7.07 (0.000)	4.32 (0.16)
Sales/employee - NFF	232.53 (35.4)	214 (13.3)	303.26 (20.5)	240.38 (19.64)
Sales/employee – F	144.81 (32.4)	150 (13.2)	174.06 (23.76)	164.67(34.3)
Difference and Sig	87.7 (0.068)	64.4 (0.001)	129.2 (0.000)	75.71 (0.06)

Note – post-hoc comparisons between the groups are reported in the paragraph below but not in the table.

Table IV: Multivariate Tests(b) for Differences in Performance Between Family and Non-family firms in the Four Groups- Values for Wilks' Lambda

Groups	Value	F	Hypothesis df	Error df	Sig.
1	0.97	0.896 (a)	12	345	0.551
2	0.94	1.56 (a)	12	284	0.09
3	0.84	2.54 (a)	12	165	0.004
4	0.87	0.865 (a)	12	68	0.585

a Exact statistic
b Design: Intercept+fambus

Table V: Descriptive Statistics and Differences in Profitability, Growth, Efficiency And Liquidity Between Family Non-family firms in the Four Groups

Variable/ Group		Group1(< 20) Mean (std error) NFF=163 FF=195	Group 2 (20-49) Mean (std error) NFF=147 FF=150	Group 3 (50-99) Mean (std error) NFF=102 FF=76	Group 4 (100-199) Mean (std error) NFF=61 FF= 20
		Small Firms	**Medium Firms**		
Return on Equity	NFF	0.55 (0.23)	0.32 (0.07)	0.166 (0.08)	0.2 (0.08)
Return on Equity	F	0.2 (0.21)	0.32 (0.07	0.189 (0.1)	0.1 (0.15)
Difference and Sig		0.35 (0.26)	-0.002 (0.98)	-.023 (0.86)	0.1 (0.56)
Return on Assets	NFF	0.13 (0.02)	0.13 (0.015)	0.11 (0.012)	0.13 (0.016)
Return on Assets	F	0.14 (0.02)	0.12 (0.015)	0.11 (0.014)	0.11 (0.03)
Difference and Sig		-0.01 (0.71)	0.015 (0.47)	-0.001 (0.98)	0.02 (0.63)
Equity ratio	NFF	0.4 (0.02)	0.45 (0.02)	0.42 (0.02)	0.44 (0.03)
Equity ratio	F	0.43 (0.02)	0.44 (0.02)	0.43 (0.03)	0.42 (0.05)
Difference and Sig		-0.03 (0.29)	0.01 (0.86)	-0.01 (0.79)	0.02 (0.76)
Net Profit Margin	NFF	0.038 (0.01)	0.056 (0.01)	0.05 (0.007)	0.067 (0.01)
Net Profit Margin	F	0.054 (0.01)	0.042 (0.01)	0.05 (0.008)	0.056 (0.017)
Difference and Sig		-0.016 (0.18)	0.014 (0.25)	0 (0.96)	0.011 (0.56)
Gross Margin	NFF	0.57 (0.014)	0.51 (0.014)	0.47 (0.015)	0.5 (0.02)
Gross Margin	F	0.59 (0.013)	0.56 (0.014)	0.52 (0.018)	0.53 (0.03)
Difference and Sig		-0.02 (0.24)	-0.05 (0.01)	-0.05(0.03)	-0.03 (0.41)
Asset Turnover	NFF	2.94 (0.17)	2.03 (0.12)	1.97 (0.11)	1.73 (0.11)
Asset Turnover	F	2.49 (0.16)	2.38 (0.12)	1.93 (0.12)	1.62 (0.19)
Difference and Sig		0.45 (0.055)	-0.35 (0.04)	0.04 (0.79)	0.11 (0.61)
Stock Turnover	NFF	4 (0.6)	3 (0.53	1.43 (0.4)	1.38 (0.19)
Stock Turnover	F	4.47 (0.55)	3.18 (0.53)	2.86 (0.46)	1.41 (0.36)
Difference and Sig		-0.47 (0.57)	-0.18 (0.81)	-1.43 (0.02)	-0.03 (0.94)
Current Ratio	NFF	2.7 (0.48)	2.35 (0.34)	2.42 (0.27)	1.79 (0.18)
Current Ratio	F	3.2 (0.44)	2.54 (0.33)	1.73 (0.31)	2.23 (0.32)
Difference and Sig		-0.5 (0.44)	-0.19 (0.69)	0.69 (0.1)	-0.44 (0.24)
Working capital/ sales	.NFF	0.1 (0.02)	0.15 (0.03)	0.13 (0.02)	0.11 (0.025)
Working capital/sales	F	0.12 (0.02)	0.13 (0.03)	0.13 (0.02)	0.15 (0.044)
Difference and Sig		-0.02 (0.48)	0.02 (0.65)	-0.001 (0.98)	-0.045 (0.39)
Acid test ratio		1.98 (0.42)	1.58 (0.15)	1.46 (0.19)	0.71 (0.25)
Acid test ratio		2.21(0.38)	1.43 (0.15)	1.04 (0.22)	1.03 (0.43)
Difference and Sig		-0.23 (0.68)	0.15 (0.46)	-0.42 (0.15)	0.32 (0.53)
Interest to sales	NFF	0.011 (0.002)	0.013 (0.002)	0.013 (0.002)	0.012 (0.002)
Interest to sales	F	0.014 (0.002)	0.013 (0.002)	0.017 (0.002)	0.019 (0.003)
Difference and Sig		-0.003 (0.310)	0.000 (0.96)	-0.004 (0.13)	-0.007(0.065)
Wages to sales	NFF	0.268 (0.011)	0.223 (0.010)	0.182 (0.009)	0.186 (0.010)
Wages to sales	F	0.272 (0.010)	0.256 (0.010)	0.231(0.010)	0.237(0.018)
Difference and Sig		-0.005(0.751)	-0.033(0.017)	-0.049(0.000)	-0.50(0.017)

Table VI: Descriptive Statistics and Differences in Profitability (with wages included in profits) Between Family Non-family firms in the Four Groups

Variable/ Group		Group1 Mean (std error) NFF=163 FF=195	Group 2 Mean (std error) NFF=147 FF=150	Group 3 Mean (std error) NFF=102 FF=76	Group 4 Mean (std error) NFF=61 FF= 20
		Small Firms	**Medium Firms**		
Return on Equity	NFF	5.02 (1.75)	2.85 (0.985)	2.24 (0.54)	2.71 (0.84)
Return on Equity	F	5.92 (1.6)	4.85 (0.975)	2.42 (0.63)	1.23(1.46)
Difference and Sig		-0.907 (0.7)	-1.998 (0.15)	-0.184 (0.83)	1.49 (0.38)
Return on Assets	NFF	0.89 (0.07)	0.58 (0.041)	0.46 (0.029)	0.44 (0.03)
Return on Assets	F	0.84(0.064)	0.704 (0.041)	0.53 (0.034)	0.48 (0.05)
Difference and Sig		-0.051(0.59)	-0.124(0.033)	0.068 (0.135)	-0.04 (0.51)
Net Profit Margin	NFF	0.3 (0.012)	0.275 (0.011)	0.23 (0.01)	0.252 (0.013)
Net Profit Margin	F	0.32(0.011)	0.295(0.011)	0.277 (0.012)	0.289 (0.022)
Difference and Sig		-0.022 (0.2)	-0.02(0.212)	-0.049(0.002)	-0.037 (0.15)

Table VII Descriptive Statistics and Differences in Growth Between Family Non-family firms in the Four Groups

Variable/ Group		Group1 NFF =137 F = 181	Group 2 NFF = 130 F = 135	Group 3 NFF = 94 F = 72	Group 4 NFF = 50 F = 19
Growth in income	NFF	-0.087 (0.06)	0.065 (0.03)	0.14 (0.03)	0.14 (0.12)
Growth in income	F	-0.056 (0.05)	0.068 (0.03)	0.092 (0.035)	-0.17 (0.2)
Difference and Sig		-0.03 (0.71)	-0.003 (0.94)	0.053 (0.26)	0.31 (0.18)
Growth in profits	NFF	-1.53 (1.38)	0.57 (0.9)	-1.93 (1.73)	-2.16 (2.56)
Growth in profits	F	0.8 (1.2)	-1.143 (0.88)	1.29 (1.98)	-1.13 (4.15)
Difference and Sig		-2.33 (0.2)	1.712 (0.17)	-3.22 (0.22)	-1.03 (0.83)

Based on estimated marginal means

a Adjustment for multiple comparisons: Bonferroni.

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