International Journal of Economic Sciences and Applied Research 3 (1): 89-95

Differences in Management accounting between family enterprises and non-family enterprises: A Statistical Approach

Christine Duller[1]

Abstract

Management accounting deals with the subject family enterprises rather little in spite of its high economical relevance. This paper questions, weather general objectives of family enterprises differ from those of non-family enterprises. Based on the hypothesis that family enterprises aim at humane objectives to a greater extent and at financial objectives to a lesser extent than non-family enterprises the results of an empirical study for the region Upper-Austria are presented. The conclusion is that apart from the extent of return on equity objectives of family enterprises do not differ much from those of non-family enterprises. The second point of interest is to analyse differences in objectives between medium and large sized enterprises.

Keywords: Business administration, empirical research, correspondence analysis

JEL classification: L21, M41

1. Introduction

According to the definition for SME (small and medium sized enterprises) given by the European Union only 0.5 % of the Austrian enterprises are classified as large enterprises (Commission of the European Communities, 2003, p. 39). Therefore the vitality, customization and competitiveness of the national economy are borne by small and medium sized enterprises. Moreover these enterprises are of special importance for the national labour market, because 65.5 % of the Austrian employees are part of those enterprises.

Most of the small and medium sized enterprises costitute family enterprises simultaneously. In Austria about 75% of all enterprises are family enterprises, and approximately 70% of all employed persons are working in family enterprises (Pichler, Bornett, 2005, p. 125; Feldbauer-Durstmüller et al., 2007, p. 428; Hasch et al., 2000, p. 62).

In spite of the high economical relevance management accounting deals with the subject family enterprises in empirical research rather little. Theoretical research in management accounting in family enterprises is focused either on foundations or successions of enterprises or on the special socio-economic aspects given by the combination of enterprise and owner family (Feldbauer-Durstmüller et al., 2007, p. 428; Klein, 2004, p. 54 f.).

1. University Linz, Department for Applied Statistics, Altenberger Straße 69, 4040 Linz, Austria - email: Christine.duller@jku.at

This paper questions, weather general objectives of family enterprises differ from those of non-family enterprises. Based on the hypothesis that family enterprises aim at humane objectives to a greater extent and at financial objectives to a lesser extent than non-family enterprises the results of an empirical study for the region Upper-Austria are presented.

2. Prior literature

Besides, practical orientated articles (e.g. Schröder, 1998; Schäfer-Kunz, 2006) there are only few scientific and theoretical orientated papers or books dealing with the topics small and medium sized enterprises, management accounting and family enterprises simultaneously.

This work is based on following theoretical approaches:

Hahn argues that due to serious changes in business environment more coordination and management in medium-sized family enterprises is needed. Controller ship – seen as management assistance – is suitable to perform this task (Hahn, 1994, p. 125 f.).

Horváth uses the Three-Circle Model built up by Tagiuri & Davis, developed by Gersick et al., to describe the management system in medium sized family enterprises as an extensive interaction of business, family and ownership (Tagiuri, Davis, 1992, p. 49; Gersick, Davis, McCollom Hampton, 1997, p. 5 f.; Horváth, 1999, p. 121 f.). Based on Horváth's conception for controller ship Feldbauer-Durstmüller and Haas elaborated a system for information, planning and controlling in medium sized family enterprises (Horváth, 2009, p. 91 f.; Feldbauer-Durstmüller, Haas, 2008, p. 107 f.).

Neither Hahn nor Horváth have conducted empirical research to verify their theoretical work, but empirical research on this topic is published for Germany (e.g. Ossadnik, et al., 2004, p. 622 f; Berens, Püthe, Siemes, 2005, p. 186 f.).

For Anglo-American countries empirical research usually deals either with objectives of enterprises in general or micro and small enterprises (e.g. Upton et al., 2001; Peel, Bridge, 1999; Gibson, Cassar, 2002; Stonehouse, Pemberton, 2002), but there is no empirical research in the special context of management accounting in small and medium sized family enterprises so far (Duller, Haas, 2009, p. 33f.).

3. Hypothesis Development

Previous research indicates that business objectives in family enterprises are less infuenced by monetary objectives, but more determined by interests of stakeholders and human objectives (Fröhlich, Pichler, 1988, p. 95 f.). Moreover, descriptive empirical research for Germany indicates that in family enterprises liquidity protection, employee satisfaction and entrepreneurial independence are more important objectives than in non-family enterprises (Günther, Gonschorek, 2006, p. 7).

Using exploratory qualitative empirical methods Spence and Rutherfoord looked at social responsibility and profit maximisation in small firms in UK. One result out of twenty face-to-face interviews was the conclusion, that most small firms are likely to be dominated by objectives concerning subsistence or social issues (Spence, Rutherford, 2002, p. 137 f.).

Due to the fact, that the distinction between family and non-family enterprises differs and the classification concerning size is ambiguous, research results from other countries and samples are possibly not adequate for Austria.

Therefore, the following hypotheses will be tested in this survey:

- Family enterprises aim at humane objectives to a greater extent than non-family enterprises.
- Family enterprises aim at financial objectives to a lesser extent than non-family enterprises.
- Medium sized enterprises aim at humane objectives to a greater extent than large sized enterprises.
- Medium sized enterprises aim at financial objectives to a lesser extent than large sized enterprises.

Furthermore, Fröhlich and Pichler argue that family enterprises' biggest interest is to survive (Fröhlich, Pichler, 1988, p. 98). For this reason it is indicated that family enterprises aspire to a smaller return of equity than non-family enterprises. This will be tested with the hypotheses:

- Family enterprises aspire to a smaller return of equity than non-family enterprises.
- Medium sized enterprises aspire to a smaller return of equity than large sized enterprises.

4. Research method and results

The research method is based on a standardized questionnaire, which was available via internet. All enterprises in Upper Austria with 50 or more employees (1180 enterprises) were invited to take part in the survey. Each enterprise got an individual link, which ensured that the completion of the questionnaire was possible for interesting enterprises exclusively. After completion the individual link was locked automatically to guarantee once-only participation.

The usable return was 236 enterprises or 20%, 189 of them declared themselves as family enterprises (80.1%). Due to the fact that the proportion of family enterprises in Austria is about 70-80%, the sample can be treated as representative.

The main point for further discussions is how a family enterprise is defined. There are many different approaches to define it. Some of the popular criterions are the following (Feldbauer-Durstmüller et al., 2007, p. 430):

- Level of equity held by a single family
- Degree of implication of the family in the management structure
- More than 50% of ownership is held by a family
- A family group controls the business

In this survey the enterprises had to decide themselves weather they are a family enterprise or not according to (at least one of) the following criteria:

- Arbitrary legal structure
- More than 50% ownership is held by family members or family close foundations
- Family members are part of management
- Syndications of families or branches of families

In order to verify the given hypotheses concerning management accounting classical statistical tests were used (Chi-squared-Test, Fisher Exact Test). Family enterprises are more often than not small and medium enterprises, too. Therefore, each of the above hypotheses was tested with respect to structure and size.

Testing the given hypotheses with respect to structure (family versus non-family enterprises) and size (medium enterprises versus large enterprises) had the following results: There was no significant difference in human objectives, neither for structure nor for size. The same result was found for financial objectives in general. Only the aspired return on equity showed significant differences for structure ($p = 0.023$) and size ($p = 0.007$).

Figure 1: Detailed results for aspired return on equity in medium and large sized enterprises

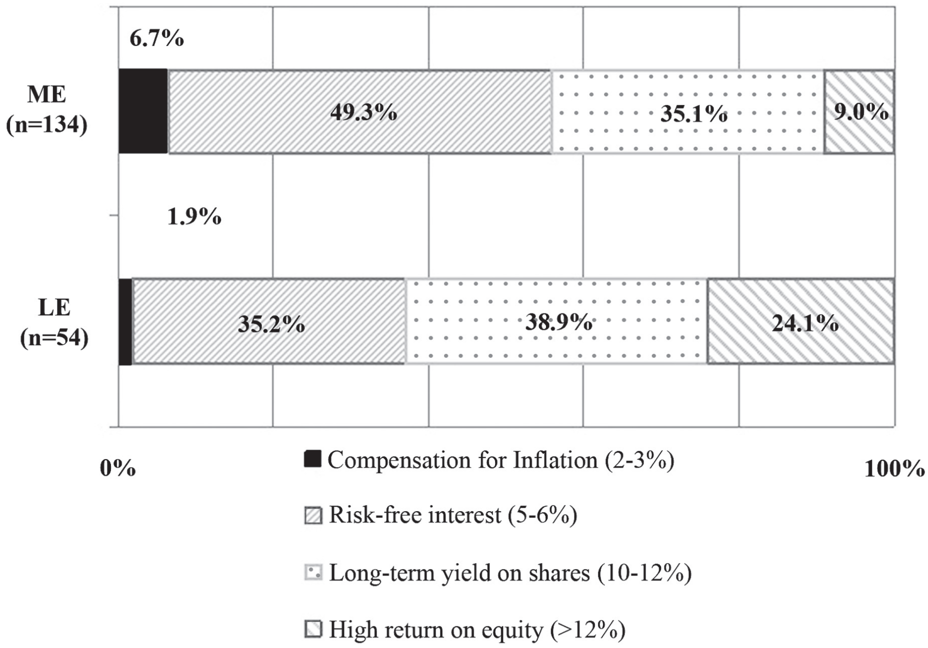

Table 1: Results for testing differences in the aspired return of equity between medium and large sized enterprises

	ME (50 - 249 empoyee)	LE (≥ 250 employee)
ROE ≤ 12%	91.0 %	75.9 %
ROE > 12%	9.0 %	24.1 %

n = 188 significant p = 0.007

This means that there is a significant difference in the aspired return of equity between medium sized and large enterprises (Figure 1 and Table 1) and also between family and non-family enterprises.

From this result the question weather the structure (family or non-family enterprises) or the size or any other criterion is the reason for the different aspired returns of equity arose. Are there some common factors, which can be extracted to explain the different aspired returns?

With the aim of extracting common explanatory factors a correspondence analysis was employed, which is a principal component analysis for categorical data (Greenacre, 2007, p. 154).

The starting point of a principal component analysis is the correlation matrix. The purpose is to create a model for data with fewer factors. The mathematical background for extracting factors is an eigenvalue decomposition. For the complete solution the number of factors is equal to the number of variables, the optimal number of factors is determined by the screetest or the Kaiser criterion (Greenacre, 2007, p. 154; Greenacre, Blasius, 2006, p. 12 f.).

The starting point of a correspondence analysis is the matrix of standardized residuals. The purpose is the same as for the principal component analysis. The mathematical background for extracting factors is the singular value decomposition. For the complete solution the number of factors is again equal to the number of variables, the optimal number of factors is determined by the screetest or the Kaiser-criterion.

With notation:

P = Correspondence matrix (relative frequencies p_{ij})
r = Mass of rows (marginal frequencies r_j)
c = Mass of columns (marginal frequencies c_i)
A = Matrix of standardized residuals

$$a_{ij} = \left(p_{ij} - r_i c_j\right) \Big/ \sqrt{r_i c_j}$$

$A = U \Gamma V^T$: Singular value decomposition
U = left singular vectors (columns), orthonormal
G = singular values (descending), diagonal matrix
V = right singular vectors (columns), orthonormal

the Singular Value Decomposition gives:

$$A^T A = V \Gamma \underbrace{U^T U}_{I} \Gamma V^T = V \Gamma^2 V^T \text{ and } A A^T = U \Gamma^2 U^T$$

and therefore we get the right singular vectors as eigenvectors of $A^T A$, the left singular vectors as eigenvectors of $A A^T$ and the squared singular values, which are the eigenvalues of $A^T A$ and $A A^T$. The squared singular values are also called principal inertias, and the proportion of the inertias to the total inertias gives the explained variance.

Similar to the principal component analysis the calculation gives the factors and the loadings for each variable on each factor. The result can be viewed in a plot, if two factors are extracted.

The input variables for the correspondence analysis were owner-structure (family enterprises versus non-family enterprises), branches of trade, number of employees, turnover, structure (national or international operating enterprises) and aspired equity yield rate. Due to the fact that sample size was rather small and available information on branches was rather poor, the variable branches had to be cancelled.

The correspondence analysis extracted two factors, the first factor was mainly determined by size (number of employee), the second factor was less important and was mainly determined by size (turnover of enterprise). The structure (family business or non family business enterprise) was nearly completely determined by the first factor. So the most important variable for prediction of the aspired equity rate is the size of an enterprise expressed by the number of employee.

5. Conclusions

Apart from the extent of the aspired return on equity the objectives of responding family enterprises do not differ from those of non-family enterprises. Moreover multivariate analyses showed that for the aspired return of equity the determining factor is not structure, but size.

This result does not verify common theoretical research. Assuming the correctness of the theoretical statements at least two possible explanations can be given for the mismatch:

1. The situation for family enterprises has changed, because nowadays their owners are better educated in business administration than some years ago. Therefore more and more family enterprises act in a similar manner like non-family enterprises to keep up their chances in the market.
2. The sample size in this work is very small, especially for multivariate analyses. Splitting the sample according to structure and size causes small frequencies in some categories, in particular large family-enterprises are very rare in the sample (and in Austria). So it is hard to find evidence for any complex statement. More and even more detailed results could be found in a bigger sample.

To clarify the results a second survey has started in August 2009. This time the population is given by all medium and large enterprises in Austria. Moreover in cooperation with universities in Germany data for some federal states of German will be compared with Austrian data.

References

Berens, W., Püthe, T., Siemes, A., (2005), 'Ausgestaltung der Controllingsysteme im Mittelstand – Ergebnisse einer Untersuchung', *Zeitschrift für Controlling und Management*, 49 (3), pp. 186 - 191.

Commission of the European Communities (Ed.), (2003), 'Commission Recommendation of 6 May 2003 concerning the definition of micro, small and medium-sized enterprises', *Official Journal of the European Union*, L 124, 46, pp. 36 - 41.

Duller, C., Haas, T., (2009), 'Unternehmensplanung und Controllinginstrumente im Mittelstand. Empirische Kontingenzfaktoren der Unternehmensgröße und Unternehmensform (Familienunternehmen versus Nicht-Familienunternehmen)', Lingnau, V.; Becker, A. (Ed.), *Mittelstandscontrolling*, Lohmar, pp. 25 - 50.

Feldbauer-Durstmüller, B., Wimmer, B., Duller, C., (2007), 'Controlling in österreichischen Familienunternehmen - dargestellt am Bundesland Oberösterreich', *Zeitschrift für Planung und Unternehmenssteuerung*, 18 (4), pp. 427 - 443.

Feldbauer-Durstmüller, B., Haas, T., (2008), 'Controlling-Konzeption für kleine und mittlere Familienunternehmen, *Feldbauer-Durstmüller*, B. et al. (Ed.), *Familienunternehmen: Controlling, Finanzmanagement, Unternehmensrechnung und Wirtschaftsprüfung*, Steuern, Wien, pp. 107 - 136.

Fröhlich, E., Pichler, J. H., (1988), *Werte und Typen mittelständischer Unternehmen*, Berlin.

Gersick, K. E., Davis, J. A., (1997), McCollom Hampton, M., *Generation to generation: Life cycles of the family business*, Boston.

Gibson, B., Cassar, G., (2002), 'Planning Behaviour Variables in Small Firms'*, Journal of Small Business Management*, 40(3), pp. 171 - 186.

Greenacre, M., (2007), *Correspondence Analysis in Practice*, 2nd edition, Boca Raton, Fla.

Greenacre, M., Blasius, J., (2006), *Multiple Correspondence Analysis and Related Methods*, Boca Raton, Fla.

Günther, T., Gonschorek, T., (2006), *Wert(e)orientierte Unternehmensführung im Mittelstand. Erste Ergebnisse einer empirischen Untersuchung*, Dresdner Beiträge zur Betriebswirtschaftslehre, Nr. 114.

Hahn, D., (1994), Controlling in mittelständischen Familienunternehmungen, Hinterhuber, H. H., (Ed.) *Die mittelständische Familienunternehmung: Die Integration der beiden Subsysteme Familie und Unternehmung in den 90er Jahren*, Frankfurt/M., pp. 125 - 153.

Hasch, A., et al., (2000), *Praxishandbuch der Unternehmensnachfolge*, Wien.

Horváth, P., (1999), 'Controlling in der Familienunternehmung', Marquardt, E.; Maurer, F. (Ed.) Freies Unternehmertum: *Voraussetzungen einer demokratischen Gesellschaft*, Rietheim-Weilheim, S., pp. 121 - 136.

Horváth, P., (2009), *Controlling*, 11. Auflage, München.

Klein, S. B., (2004), 'Familienunternehmen: Theoretische und empirische Grundlagen, 2', Auflage, Wiesbaden.

Ossadnik, W., Barklage, D., van Lengerich, E., (2004), 'Controlling im Mittelstand: Ergebnisse einer empirischen Untersuchung', *Controlling*, 11, pp. 621 - 630.

Peel, M., Bridge, J., (1999), 'Planning, business objectives and capital budgeting in Japanese, German and domestic SMEs: Some evidence from the UK manufacturing sector'. *Journal of Small Business and Enterprise Development*, 6 (4), pp. 350 - 365.

Pichler, J. H., Bornett, W., (2005), 'Wirtschaftliche Bedeutung der kleinen und mittleren Unternehmen (KMU) in Österreich', Schauer, R. et al., (Ed.) *Mittelständische Unternehmen: Probleme der Unternehmensnachfolge*, Linz, S., pp. 117 - 150.

Schäfer-Kunz, J., (2006), 'Controlling in Familienunternehmen: Zwischen Intuition und Navigation', Böllhoff, C., et al. (Ed.) *Spitzenleistungen in Familienunternehmen: Ein Managementhandbuch*, Stuttgart, pp. 85 - 100.

Schröder, E. F., (1998), 'Controlling: Unternehmenssteuerung in Familienunternehmen', Hennerkes, B.-H., et al. (Ed.), *Unternehmenshandbuch Familiengesellschaften, 2*, Auflage, Köln, pp. 231 - 286.

Spence, L. J., Rutherford, R., (2000), 'Social Responsibility, profit maximisation and the small firm owner-manager', *Journal of Small Business and Enterprise Development*, 8(2), pp. 126 - 139.

Stonehouse, G., Pemberton, J., (2002), 'Strategic planning in SMEs – some empirical findings', *Management Decision*, 40 (9), pp. 853 - 861.

Tagiuri R., Davis, J.A., (1992), 'On the Goals of Successful Family Companies', *Family Business Review*, 5(1), pp. 43 - 62.

Upton, N., Teal, E. J., Felan, J. T., (2001), 'Strategic and Business Planning Practices of Fast Growth Family Firms', *Journal of Small Business Management*, 39 (1), pp. 60 - 72.