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Measuring Performance Gaps Between Family and Non-Family Businesses: A Meta-Analysis of Existing Evidence

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Abstract

Although researchers devoted much academic attention on the question whether family businesses perform better than non-family businesses, studies focused on this topic produced contradictory results. In this article, we performed a meta-analysis of 78 studies and tried to answer the question whether, according to the contemporary state of knowledge, the relation between family involvement and firm performance could be always positive. After having analysed the most important studies from this field using the Hunter-Schmidt method, we could not reject this hypothesis, but we can be almost sure that the impact of family involvement on business performance is not adversary. The mean size of the effect was moderately positive, which suggests a slightly positive impact of family ownership and management on business performance. We also found out that ROA is by far the most frequently used measure of business performance in these studies, followed by Tobin's q, sales growth and ROE.

Keywords: family business; performance; meta-analysis

INTRODUCTION

While much academic debate has been focused on the roles and relationships between a company's management, its board, its shareholders and other stakeholders, family businesses are considered to be different from non-family companies, because they are led (or managed) by members of a family with a vision of continuing the business across multiple generations. Moreover, family members are supposed to be altruistic toward each other, following obligations which are part of normative moral order in most cultures around the world. At the same time, family businesses form a substantial part of the world economics, representing, for instance, one third of all the companies listed in the Standard & Poor 500 (Anderson and Reeb, 2003). In some collectivist cultures, especially in South and East Asia or Latin America, family businesses are becoming the prevalent form of business (Carney and Gedajlovic, 2002).

A question which necessarily arises is whether family businesses perform better than non-family businesses, and why. The effect of family involvement is sometimes referred to as "family effect". Much academic attention has been devoted to this subject, but unfortunately with mixed results. This paper addresses the question what is the current state-of-the-art in the research on the relation between family involvement and firms' performance. It is based on a quantitative survey of 78 research papers focusing on the analysis of performance gaps between family and non-family businesses. In the first section, we describe

the most important approaches to definition of family business and make a review of existing literature on the subject. In the second section, we describe the main approaches to measuring performance gaps between family and non-family businesses. In the third section, we examine quantitatively the studies using a meta-analysis based on the Hunter-Schmidt method and analyse what the most frequently used indicators of business performance are. Finally, we propose possible sources of misinterpretation and discuss the outcomes.

2 Definitions of Family Businesses

The definition of family businesses is far from being standardised. Rosenblatt et al. (1985) define a family business as any company in which majority ownership or control is carried out by a single family and in which two or more family members are or at some time were directly involved in the business. Leach (2007) defines family businesses as companies where family members own at least 50 percent of the business. Other authors consider a firm as a family enterprise when a family or a private person controls 20% or more of the voting rights (Anderson and Reeb, 2003), while others define family businesses as enterprises in which one or more family members are officers or directors, or own 5% or more of the firm's equity, either individually or as a group (Villalonga and Amit, 2006).Klein (2000) defined a measure of family influence, called "substantial family influence" (SFI), which is composed of three elements and can be quantified using the family's share in the capital of the firm, the family's share of the seats on the governance board, and the family's share of the seats on the management board. The firm can be considered a family firm if the sum of these elements is greater than one.

Most definitions of family business vary in terms of degrees of family involvement. If follows that since the definitions of family businesses vary, most studies on performance gaps between family and non-family businesses will differ in the data sample definition, which has a fundamental impact on the results.

3 Performance Gaps: An Overview of Current State-of-the-art

Family businesses are often supposed to aim to achieve a combination of financial and nonfinancial business goals. Some authors suggest that while family proprietors seek to continue their business across generations and to maximize its long-term value, managers of non-family firms focus on a shorter term, seeking mainly to satisfy shareholders and to pursue their own personal goals (Daily and Dollinger, 1992). In addition, some studies suggest a presence of positive benefits of the family involvement such as friendly and intimate relationships among managers and owners, as well as employees, which has a positive effect on knowledge dissemination within the firm. It is also possible that family companies, especially the small ones, are not motivated to pursue financial objectives and often prefer to maintain the status quo (Birley, 2000). However, the findings on the differences in performance are mixed.

While many authors found evidence of a better economic performance of family firms compared to non-family firms (Aguiló and Aguiló, 2012; Allouche et al., 2008; Cassia, De Massis, and Kotlar, 2012; Coleman and Carsky, 1999; Gallo and Estapé, 1992; Maury, 2006; McConaughy, Matthews, and Fialko, 2001; San Martin-Reyna and Duran-

Encalada, 2012; Shyu, 2011), other authors present the opposite results: a negative relationship between family involvement and performance (Gallo, Tapies, and Cappuyns, 2000; Lam and Lee, 2012; Lin and Chen, 2012; Oswald, Muse, and Rutherford, 2007; Perez-Gonzalez, 2006; Westhead and Howorth, 2006). Yuan, Zhang and Zhang (2008) report that family-owned firms achieve significantly better performances than state-owned enterprises, which could be perhaps associated with a negative influence of state ownership rather than non-family ownership. However, many authors found no significant relationship between family involvement and performance (Chrisman, Chua, and Litz, 2004; Demsetz and Villalonga, 2001; Himmelberg, Hubbard, and Palia, 1999; Schulze et al., 2001).

According to some researchers, family businesses seem to outperform non-family firms in terms of performance, but performance decreases through generations (Ehrhardt, Nowak and Weber, 2005). Control by heirs is sometimes associated with lower profitability and growth; family successions can have a negative causal impact on firm performance (Bennedsen et al., 2007; Morck, Strangeland, and Yeung, 2000; Villalonga and Amit, 2006). In addition, non-family firms have frequently been reported to grow faster than family firms, since family owners often restrict growth in order to retain control of the firm within the family (Birley, 2000; Daily and Dollinger, 1993).

These contradictory results may be partially due to different methodological approaches employed, such as various definitions of what constitutes a family firm. Moreover, the differences in performance comparison outcomes are sometimes explained by the idea that family influence has a positive effect on firm performance up to a certain level. In particular, the relationship between the share of family ownership and firm performance in often considered being inverted U-shaped, which means that increased family involvement may initially contribute to firm performance, but when it becomes large enough, it may foster negative effects of the family ownership and management, for instance altruism and conflicts among family members, and eventually reduce performance (Ernst, Kraus and Matser, 2012; Holdermess et al., 1999; Kowalewski, Talavera, and Stetsyuk, 2009; Sciascia and Mazzola, 2008; Zellweger et al., 2006).

4 Performance Measurement Metrics

From most past research, it is evident that reliable information on family businesses is very difficult to obtain (see e.g. Schulze et al., 2003). Generally, public information is not reliable since most family businesses have no legal obligation to reveal internal data, and family businesses are usually not listed as a separate category of companies or sectors.

Traditionally, business performance is often proxied by profitability ratios such as return on assets (ROA), return on equity (ROE), or return on sales (ROS), along with other financial ratios such as liquidity, asset management, leverage or market value indicators (e.g. market-to-book ratio). Another frequently used measure of performance is the Tobin's q, which is the ratio between the market value and replacement value of the same company. Performance of firms may also be measured by the firm growth, usually expressed in terms of sales growth, because sales are probably the easiest variable to capture.

5 Methodology

Based on a set of 78 past studies focused on exploring the performance gap between family and non-family firms, which provide mixed results, we made an attempt to summarize their results and find evidence on the relationship between family and non-family businesses performance using a meta-analysis based on the Hunter-Schmidt method (Hunter and Schmidt, 2004).The hypothesis we want to test is:

H1: The relation between family involvement and firm performance is always positive.

The effect size r_i is represented by the principal conclusions of the individual studies; a negative relationship between family involvement and performance results in an effect of r_i = –1; mixed results or no significant relationship is represented by r_i = 0; and positive relationship between family involvement and performance is represented by r_i = 1. Furthermore, the effect is weighted by study quality Q_i. A study is rated by Q_i= 1 when indexed in ISI Web of Knowledge or Scopus; otherwise, it is rated by Q_i = 0.5. Conference proceedings and unpublished works are rated by Q_i = 0.1. The effect-size estimates r_i and the sample sizes N_i are used to determine the weighted mean effect size as

$$\bar{r} = \frac{\sum_{i=1}^{k} N_i r_i}{\sum_{i=1}^{k} N_i} \quad (1)$$

Where k denotes the total number of studies (k = 78).

Following Hunter and Schmidt (2004), the variance of effect sizes is estimated by correcting the variance in sample effect sizes σ_r^2 by the sampling error σ_e^2, so

$$\hat{\sigma}_\rho^2 = \sigma_r^2 - \sigma_e^2 \quad (2)$$

where the variance of sample effect sizes is calculated as

$$\sigma_r^2 = \frac{\sum_{i=1}^{k} N_i (r_i - \bar{r})^2}{\sum_{i=1}^{k} N_i} \quad (3)$$

and the sampling error is specified as

$$\sigma_e^2 = \frac{\left(1 - \bar{r}^2\right)^2}{\bar{N} - 1} \quad (4)$$

where $\bar{N}$ is the average sample size. Then, we can specify the 95% confidence interval using the confidence limits (*lb* = lower bound, *ub*= upper bound):

$$\{lb, ub\} = \bar{r} \pm 1.96\sqrt{\hat{\sigma}_\rho^2} \quad (5)$$

6 Results and Discussion

In table 1, we summarize the results of the overall meta-analysis. We focused on 78 most cited studies focused on family involvement-performance relationship.

Tab. 1: Overall results for the family involvement–performance relation

[TABLE 1 about here]

The weighted mean effect is moderately positive ($\bar{r}$ = 0.1332). This number suggests there is an empirical evidence of a positive relationship between family involvement and performance, since an effect of 1.0 would mean there is *always* a positive influence of family ownership and control on a firm's performance, while 0.0 would mean there is *no* such influence and -1.0 would indicate an adverse influence. The positive relationship is however not as strong as some studies suggest. The 95% confidence interval ("the degree of certainty that the values in the distribution lie in this interval", Hunter and

Schmidt, 2004) is -0.8646 to 1.1311, which means that ninety five percent of all the effects fall in this interval. Hence, it is highly improbable that the family effect on performance is *always* negative; however, it may be *always* positive. However, the confidence interval contains the zero value, so the effect direction and magnitude is not generalizable and the weighted mean effect $\bar{r}$ is not significant. As we can't reject the null hypothesis H1, that is to say, we could not reject the hypothesis that the relation between family involvement and firm performance is always positive, we can only state that H1 may be correct.

We also summarize the most frequently used measures of business performance in table 2. The most frequently used metric was ROA, followed by Tobin's q and growth, usually expressed in sales growth. Surprisingly, efficiency and productivity are seldom used, although they represent a theoretically sound measure of performance.

While ROA, ROE and other financial ratios capture financial performance only, Tobin's q or market value added require the companies to be quoted, which is not applicable for most small firms. Furthermore, the indicators may have different time horizon. As we already noted, if family businesses focus on a longer time period to maximize their value across generations, they may focus on long-term growth, while non-family businesses may be focused on short-term results (for example, ROE maximization).

Tab. 2: Most frequently used performance measures in the studies

[TABLE 2 about here]

However, the true „family effect" is not necessarily incorporated within ROE or ROA indicators. More interesting outcomes could arise if a measure which takes into consideration the *cost of equity* was used. We can cite the family shareholder return formula (de Visscher, Aronoff and Ward, 1995):

$$k_e = \left(R_f + \beta\left(R_m - R_f\right)\right)\left(1 + IP\right)\left(1 - FE\right) \quad (6)$$

which introduces the "family effect" in CAPM formula with an illiquidity premium (IP) and a family effect (FE).FE can range from 0 for contentious businesses to 1 for a perfectly dedicated family. The formula suggests that the cost of equity of family firms is likely to be less than the cost of equity of non-family firms. Although the cost of equity is usually higher than the cost of debt, most authors don't consider it in their calculations. One of the indicators which does take into account the cost of equity is the economic value added (EVA). However, this measure was not used in comparing family and non-family firms to these days.

In table 3, we present a brief overview of the studies we included into the meta-analysis.

Tab. 3: Overview of the studies

[TABLE 3 about here]

7 Conclusion

Although there has been much academic debate over the question whether family businesses perform better than non-family businesses, the studies focused on this topic produced contradictory results. In this article, we performed a meta-analysis of 78 studies and tried to answer the question whether, according to the contemporary state of

knowledge, the relation between family involvement and firm performance could be always positive.

After having analysed the most important studies which focused on this question using the Hunter-Schmidt method, we could not reject this hypothesis, but we can be almost sure that the impact of family involvement on business performance is not always adversary. The mean size of the effect was moderately positive, which suggests a slightly positive impact of family ownership and management on business performance.

We also found out that ROA is by far the most frequently used measure of business performance in these studies, followed by Tobin's q, sales growth and ROE. We discussed the possible issues arising from the selection of these indicators, in particular the issue of the cost of equity measurement, because according to some authors, the cost of family businesses' equity is likely to be lower than in the case of their non-family counterparts. Future research should be focused on the analysis of the "family effect" which reduces the cost of equity of family businesses, and by taking into account this expensive portion of capital,researchers could find a better evidence in comparative studies on family and non-family businesses.

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Tab. 1: Overall results for the family involvement–performance relation

Parameter	Value
Total number of studies (*k*)	78
Weighted mean effect ($\bar{r}$)	0.1332
Average sample size ($\overline{N}$)	936.32
Variance of sample effects (σ_r^2)	0.2602
Sampling error variance (σ_e^2)	0.0010

Variance of population effect sizes ($\hat{\sigma}_{\rho}^{2}$)	0.2592
95% confidence interval – upper bound (*ub*)	1.1311
95% confidence interval – lower bound (*lb*)	-0.8646

Tab. 2: Most frequently used performance measures in the studies

Measure	No. of occurences
ROA	41
Tobin‘s q	23
Growth	20
ROE	15
ROS	7
Market/book ratio	5
Productivity	4
Efficiency	1

Tab. 3: Overview of the studies

Study	Performance measures	N_i	r_i
Aguiló, Aguiló (2012)	ROA, ROE, Tobin's Q	101	1.0
Allouche et al. (2008)	ROA	86	1.0
Allouche, Amann, Garaudel (2007)	ROA, productivity	248	0.0
Anderson, R., Reeb (2003)	ROA, ROE, Tobin's q	403	1.0
Barontini, Caprio (2006)	ROA, Tobin’s q	675	0.0
Barth et al. (2005)	Productivity	438	0.0
Bennedsen et al. (2007)	ROA	5334	0.0
Blanco-Mazagatos et al. (2007)	ROA	65	1.0
Bonilla, Sepulveda, Carvajal (2010)	ROA	2 50	1.0
Cai, Luo, Wan (2012)	ROA, Tobin’s q	35	1.0
Carney, Gedajlovic (2002)	Profitability, liquidity, payout levels, investment	10	0.0
Cassia, De Massis, Kotlar (2012)	ROA, ROE, ROS	74	1.0
Chang (2003)	Profitability	41	0.0
Chrisman, Chua and Litz (2004)	Sales growth	1 14	1.0
Chu (2011)	ROA	78	1.0
Claessens, Djankov (1999)	Profitability, labor productivity	70	1.0
Cruz, Justo, De Castro (2008)	ROA	53	0.0
Daily and Dollinger (1992)	Size, growth	186	1.0
Demsetz, Villalonga (2001)	Tobin's q	51	0.0
Durand, Vargas (2003)	Efficiency (DEA)	16	1.0
Chrisman, Chua, Litz (2004)	Sales growth	1 14	0.0
Ehrhardt, Nowak, Weber (2005)	ROA	12	1.0
Ernst, Kraus, Matser (2012)	Multiple	49	0.0
Farooque et al. (2007)	ROA, Tobin’s q	66	0.0
Filatotchev, Lien, Piesse (2005)	ROA	22	1.0
Gallo and Estapé (1992)	Multiple	1 00	1.0
Gallo, Tapies, and Cappuyns (2000)	ROE, ROS, debt, asset management ratios and more	30	0.0
Gomez-Mejia et al. (2001)	Newspaper circulation	276	-1.00
Gonzáles et al. (2012)	ROA	52	0,5
Gorriz and Fumas (1996)	Multiple	8	1.0
Himmelberg et al (1999)	Tobin’s q	40	0.0
Holdermess et al (1999)	M/B ratio	1 23	0,5
Hossain (2007)	Investment performance	71	1.0
Jacquemin, De Ghellinck (1980)	Profitability	10	0.0

Jiang, Peng (2011)	Stock return	74	0.0
Jorissen et al. (2002)	Profitability, liquidity, solvency, growth	83	0.0
Kim, Gao (2013)	ROI, growth, market share, product quality	15	0.0
King, Santor (2008)	ROA, Tobin's q	61	0.0
Kotey (2005)	Multiple	42	0.0
Kowalewski et al. (2009)	ROA, ROE	21	0,5
Lam &Lee (2012)	Multiple	346	-1.00
Lappalainen, Niskanen (2012)	ROA, Tobin's q	60	0.0
Lee (2006)	Growth, profitability	40	1.0
Lin, Chen (2012)	Tobin's q	1 24	-1.0
Lopez-Gracia, Sanchez-Andujar (2007)	ROA, growth	85	1.0
Markin (2004)	ROA	25	0.0
Martikainen, Nikkinen, Vähämaa (2009)	Productivity	50	1.0
Martínez, Stöhr, Quiroga (2007)	ROA, ROE, Tobin's q	17	1.0
Maury (2006)	ROA, Tobin's q	1 67	1.0
McConaughy et al. (1998)	Sales growth	23	1.0
McConaughy et al. (2001)	Capital structure, sales growth, debt, M/B ratio	21	1.0
Miller et al. (2008)	Tobin's q	110	0.0
Mishra, Randøy, Jenssen (2002)	Sales growth	12	1.0
Morck et al. (1988)	Tobin's q	37	0.0
Morck et al. (2000)	ROA, ROS, sales growth, headcount growth	24	0.0
Oswald, Muse, Rutherford (2007)	Financial performance, growth	2 631	-1.00
Perez-Gonzalez (2006)	Operating return on assets (OROA)	335	-1.00
Randøy, Jenssen, Goel (2003)	Tobin's q	14	0.0
Rettab et al. (2011)	Income	20 57	0.0
Rutherford, Kuratko, Holt (2008)	Revenue	83	0.0
Sacristán-Navarro et al. (2011)	Multiple	1	0.5
Saito (2008)	Tobin's q	1 81	0.0
San Martin-Reyna, Duran-Encalada (2012)	Tobin's q, M/B ratio	9	1.0
Schulze et al., (2001)	Five-year average sales growth	1 37	0.0
Schulze et al., (2003)	Sales growth	88	0.0
Sciascia, S., Mazzola (2008)	ROA, ROE,sales growth, M/B ratio, and others	62	0.0
Shyu, J. (2011)	ROA, Tobin's q	46	1.0
Smith (2008)	ROA	2190	0.0
Sraer, D., Thesmar, D. (2007)	ROA	42	1.0
Tanewski, Prajogo, and Sohal (2003)	Product innovation, process innovation and more	2 00	0.0
Thomsen&Pedersen (2000)	ROA, M/B ratio	43	0.0
Uhlaner, Floren, Geerlings (2007)	Financial performance	23	1.0
Villalonga and Amit (2006)	Tobin's q	50	0,5
Wellalage, Locke, Scrimgeour (2012)	ROA, Tobin's q	6	1.0
Westhead, Cowling (1997)	Revenue	14	0.0
Westhead,Howorth (2006)	Revenue	905	-1.00
Yuan, Zhang, Zhang (2008)	ROA, M/B ratio	67	1.0
Zellweger et al (2006)	ROE	95	0.5