

OUTSOURCING OF FINANCIAL AND MANAGEMENT ACCOUNTING: DO FAMILINESS AS A SOCIAL CAPITAL AND COMPANY SIZE AS AN ORGANIZATIONAL CAPITAL AFFECT THE DECISION TO MAKE SUCH A TRANSFER?

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Abstract

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The paper examines the impact of family and size on accounting outsourcing decisions and interactions between those variables. Based on a survey from German and Polish companies, we employ Bayesian logistic regressions for testing hypotheses and interactions of independent variables. The results support the hypotheses and indicate the combined influence of family firms and, therefore, family-social perspective and size on accounting outsourcing decisions. Larger firms are less likely to outsource financial and managerial accounting regardless of family influence, but in smaller firms, more significant family influence results in a lower likelihood of accounting outsourcing. This paper addresses a topic missing from the literature on the combined effects of size and family on accounting outsourcing (including financial and management accounting outsourcing at the same time).

Keywords: Accounting, Family Firms, Outsourcing, SMEs, Socio-Emotional Wealth, Transaction Cost Theory

Authors' individual contribution: Conceptualization — R.R., E.Z., and J.D.; Methodology — R.R., E.Z., and J.D.; Formal Analysis — R.R.; Investigation — R.R., E.Z., and J.D.; Writing — R.R., E.Z., and J.D.

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1. INTRODUCTION

Outsourcing offers companies several benefits: flexibility of operations, concentration on core activities, access to appropriate sources of knowledge and skills, improvement in the quality of tasks performance, and cost reduction. These results in increased productivity and profitability (Aman, Hamzah, Amiruddin, & Maelah, 2012; Kremic, Tukul,

& Rom, 2006; Asatiani, Penttinen, & Kumar, 2019). Also, Quinn (1999) indicated that companies that are successful in the marketplace make investments in three areas of outsourcing, namely: “traditional service or functional activities performed in-house; complementary, integrative, or duplicative activities scattered throughout the company; and disciplines, subsystems, or systems in which outsiders have greater expertise or capabilities for innovation”

(p. 14). It means that outsourcing is a powerful tool to generate business value and gain a competitive advantage (Maelah, Aman, Amiruddin, Auzair, & Hamzah, 2012). The transferring of functions/processes is a common practice among private and public organizations and is one of the main elements of business strategy (Maelah, Aman, Hamzah, Amiruddin, & Auzair, 2010).

In a competitive business environment, it is apparent that companies outsource non-core functions to others (Kim & Won, 2007). One such function that is readily transferred to a third-party provider and thus benefits is accounting (Juma'h & Wood, 1999; Barrar, Wood, Jones, & Vedovato, 2002; Kakabadse & Kakabadse, 2005; Smith, Morris, & Ezzamel, 2005; Aman et al., 2012; Asatiani et al., 2019). Accounting outsourcing covers a wide range of activities. It includes simple activities (e.g., financial records), processes requiring more significant and more complex knowledge and analysis (e.g., treasury services, tax strategy or financial planning and analysis, and even internal reporting), and also other tasks of management information system (Krell, 2007; Lepistö, Dobroszek, Lepistö, & Zarzyck, 2020). It is indicated that the finance and accounting outsourcing market is growing and will continue to grow (Krell, 2007). Accounting outsourcing can take many forms. The accounting function can be performed a short distance from the principal or even in another geographical area (offshoring). This means that while outsourcing is associated with potential cost savings, there can also be risks behind it, such as loss of management oversight and control (Kremic et al., 2006; Maelah et al., 2010). In particular, the issue of control in accounting can be seen in the context of family firms which are often small- and medium-sized enterprises (SMEs) (Lubatkin, Simsek, Ling, & Veiga, 2006; Moores & Salvato, 2009). Following socio-emotional wealth theory (SEW), family members and owners in family firms management want to preserve family control over operations (Gomez-Mejia, Haynes, Nunez-Nickel, Jacobson, & Moyano-Fuentes, 2007; Gomez-Mejia, Cruz, Berrone, & De Castro, 2011). Thus, we expect family firms to be reluctant to use outsourcing in accounting.

Family firms have specific characteristics that non-family businesses do not have. These include family ownership and power, family involvement in firm management, close family relationships with managers, and reputation, family emotional commitment to the firm, as well as "dual" social capital (firm capital and family capital) (Anderson & Reeb, 2003; Villalonga & Amit, 2006; Carrera, 2017; Biswas, Roberts, & Whiting, 2022). These characteristics are important factors that influence business decisions and affect accounting, including financial accounting and management accounting practice and decisions about outsourcing in this area. Taking into account that family firms are seen as less professional than non-family firms (Hiebl & Mayrleitner, 2019), what may impair their competitiveness (Nandan, 2010; Lopez & Hiebl, 2015), the outsourcing offers a way to get access to professional services faster than compared to building up such services internally. In addition, family firms most often appear as SMEs experiencing resource constraints more quickly (Lopez & Hiebl, 2015), and outsourcing offers an opportunity to reduce this burden. Both lines of

argument support the thesis that outsourcing the accounting function is a promising option for family firms and SMEs. The main reason behind the decision to outsource accounting in SMEs seems to be, in particular, cost reduction, as expressed by the transaction cost theory (TCT) (Everaert, Sarens, & Rommel, 2010).

In this regard the tension between two essential theories (SEW and TCT) regarding the extent of accounting outsourcing: family influence (social capital) versus size (organizational capital). Yet, extant research is silent in which way this interaction plays out in family firms and SMEs. This is unfortunate for accounting scholars, given that we have an incomplete picture of the organization of accounting functions in SMEs and family firms.

The paper examines the impact of family and size on accounting outsourcing decisions and interactions between those variables.

We conduct an empirical study with German and Polish firms over the year 2017–2018. We test three hypotheses on the effect of firm size, family impact on the prevalence of outsourcing financial and management accounting and analyze interaction effects between the variables mentioned above. The results indicate the impact of size on outsourcing as both financial and management accounting are more willingly outsourced in smaller companies. Interestingly, larger firms use less outsourcing independent of family influence, but in smaller firms, an enormous family influence decreases the level of outsourcing which supports the proposed interaction effect.

The paper contributes to the literature on accounting in SMEs and family firms in several ways. First, there are many studies on accounting in SMEs in general, including those pointing out the specificity of the accounting in this kind of organization, and in the context of large companies, but also the need to improve accounting services to more accurately determine financial performance, but also to support the management process (Jayabalan, Dorasamy, Raman, & Ching Ching, 2009; Maseko & Manyani, 2011; Belal, 2013; Nwobu, Faboyede, & Onwuelingo, 2015). In addition, the publications broadly refer separately to the presentation of financial accounting (Tanwongswal & Pinvanichkul, 2008; Ezejiofor, Ezenyirimba, & Olise, 2014; Zotorvie, 2017) and management accounting (Nandan, 2010; Lopez & Hiebl, 2015; Azudin & Mansor, 2018). In our study, both accounting subsystems are included. Second, given the critical role of family firms, especially being SMEs (Chen, Hsu, & Chang, 2014; Evert, John, McLeod, & Payne, 2016), researchers have conducted many accounting studies in this regard, verifying the specificity of accounting and indicating that there is the development of accounting systems, but they are less professional than for non-family businesses (Salvato & Moores, 2010). Most scholars discuss, but also separately, the financial accounting in family firms in the context of quality of information and financial measurement (Cascino, Pugliese, Mussolino, & Sansone, 2010; Ghosh & Tang, 2015), and the management accounting in family firms concerning the control management, which has an informal nature (Hiebl, Feldbauer-Durstmüller, Duller, & Neubauer, 2012; Hiebl, Duller, Feldbauer-Durstmüller, & Ulrich, 2015; Neubauer, Mayr, Feldbauer-Durstmüller, & Duller, 2012; Hiebl, 2013). Third, there is a variety of research on accounting outsourcing in general that indicates the importance

of the transfer of these functions from the point of view of cost reduction (TCT theory) and of quality improvement (Nicholson, Jones, & Espenlaub, 2006; Maelah et al., 2012; Rogošić, 2019). However, there is scant research in this area in the context of SMEs (Jones, U., Peter, & Douglas, 2001; Jayabalan et al., 2009), and practically none for family businesses. Therefore, our study fills a research gap in the research on outsourcing in family firms (Hunter & Cooksey, 2004). In particular, they indicate using SEW theory that family firms are more likely to engage in captive offshoring (i.e., make strategy) rather than offshore outsourcing (i.e., buy strategy) (Pongelli, Calabrò, & Basco, 2019). In this regard, our study addresses a missing topic in the literature, i.e., the outsourcing of financial accounting and management accounting in SMEs and family firms based on SEW and TCT using two variables: the size of the organization and social aspect, i.e., family impact.

The paper is structured as follows. Section 2 gives a literature review and derives hypotheses. Section 3 describes measurement and statistical inference, while Section 4 contains results. Section 5 discusses the results and concludes the paper.

2. LITERATURE REVIEW AND HYPOSESES DEVELOPMENT

2.1. Accounting outsourcing and family firms

Accounting is a crucial business function and a key information system (Ahrens & Chapman, 2007; Maelah et al., 2010; Songini, Gnan, & Malmi, 2013). It primarily deals with the financial measurement of business activity and provides information for managers, including planning and control, and decisions (Eierle & Schultze, 2013; Hemmer & Labro, 2008). Yet, the institutionalization of accounting, the use of instruments and methods differs in different types of firms, especially family firms and SMEs (Salvato & Moores, 2010; Zotorvie, 2017). The accounting function, especially financial accounting, can be transferred to external service providers, which is claimed to reduce the costs and risk, increase profitability and improve the firms' value (Barrar et al., 2002; Kakabadse & Kakabadse, 2005; Smith et al., 2005; Jiang & Qureshi, 2006; Asatiani et al., 2019). Previous research explained outsourcing accounting in SMEs using TCT, which is associated with drivers such as asset specificity, environmental uncertainty, behavioral uncertainty, and frequency (Brouthers & Nakos, 2004; Everaert et al., 2010).

Nevertheless, the situation for family firms seems to be different (Memili, Chrisman, & Chua, 2011; Songini & Gnan, 2015; Chua, Chrisman, & Bergiel, 2009). SEW theory predicts that family firms are less professionalized in managerial practices, organization, knowledge, and thus accounting (Prencipe, Bar-Yosef, & Dekker, 2014; Hiebl & Mayrleitner, 2019). The intertwined nature of family and firm distinguishes family firms from other organizations as the family members are closely related to the firm and may influence decisions in the company (Cascino et al., 2010; Lopez & Hiebl, 2015; Martínez-Ferrero, Rodríguez-Ariza, & Bermejo-Sánchez, 2015). The preservation of the social and emotional wealth of the family becomes the basic reference framework used by family businesses to make important strategic decisions (Berrone, Cruz, Gomez-Mejia, & Larraza-Kintana, 2010; Gomez-Mejia

et al., 2007; Gomez-Mejia et al., 2011). Moreover, in family-owned companies, control is not executed through formal management accounting tools, but mainly through informal control relating to family ties, relationships with employees, or identity building (Moores & Mula, 2000; Neubauer et al., 2012; Hiebl et al., 2015; Bisogno & Vaia, 2017). This is because the owners, managers, and employees are frequently family members (Handler, 1990; Stewart & Hitt, 2012; Chen et al., 2014). Thus, the situation for family firms concerning outsourcing decisions seems to be driven by the above-mentioned specific factors. We assume that to maintain control over accounts and financial information, firms with a higher level of family influence rely more often on internal functions and less on external contractors providing accounting services (Neubauer et al., 2012; Senftlechner & Hiebl, 2015; Pongelli et al., 2019).

Interestingly, TCT theory supports this view, as family firms may experience higher levels of opportunism of external accountants. The lack of trust for external contractors represented by family members may result in a reluctance to use outsourcing of accounting (Everaert et al., 2010; Maelah et al., 2010; Pongelli et al., 2019). Memili et al. (2011), while analyzing such factors as human asset specificity, threats of opportunism, and risk aversion, indicate that family firms with no complex business will be less willing to outsource certain functions or tasks as they experience lower transaction costs for internal services compared to non-family firms (Aubert, Rivard, & Patry, 1996; Everaert et al., 2010; Aman et al., 2012). Building on our literature review, we developed such hypotheses:

H1a: Family firms use less outsourcing of financial accounting.

H1b: Family firms use less outsourcing of management accounting.

2.2. Accounting outsourcing and company size

In SMEs that make up most firms in most economies (Mitchell & Reid, 2000; Cusmano, Koreen, & Pissareva, 2018; Abrie & Doussy, 2006), implementing accounting functions face a standard limiter: resource constraints. While all firms face such constraints, SMEs experience limits faster than larger firms (Everaert et al., 2010). To overcome them, external sourcing of accounting services offers opportunities to get access to professional and high-quality services (Berry, Sweeting, & Goto, 2006; Everaert, Sarens, & Rommel, 2007; Jayabalan et al., 2009; Everaert et al., 2010). Moreover, smaller organizations lack the economies of scale necessary to design and implement effective accounting systems internally. Based on TCT, outsourcing enables SMEs to refocus scarce resources to building core competencies while improving the operations and reducing the cost of outsourced activities (Quinn, 1999; Abdul-Halim, Hazlina Ahmad, & Ramayah, 2012). As outsourcing involves economic costs such as billing and operations costs, SMEs face the risk of failing to achieve economies of scale or incurring additional transaction costs (Abdul-Halim et al., 2012). Apart from costs, the other barriers to using external accounting services by SMEs are concerns about the quality of contractors and the managers' aversion to revealing the companies' weaknesses to a third party (Blackburn, Carey, & Tanewski, 2018). Everaert et al. (2007) show that more than half of the SMEs in their study use both in-house accounting and external contractors,

as they require both “accounting information at hand” (p. 716) and external expertise. On the other hand, larger SMEs prefer keeping accounting functions completely internally (Everaert et al., 2007).

Based on TCT, we assume that in smaller companies with lower asset specificity of accounting functions and routine and straightforward accounting tasks, the accounting functions are more intensely outsourced (Everaert et al., 2010). This may provide significant compliance and management benefits (Oosthuizen, Van Vuuren, & Botha, 2020). Thus, smaller companies have incentives to transfer their functions outside to take advantage of the scale and scope of specialized external units and their employees (Chiles & McMackin, 1996; Nicholson et al., 2006; Ono & Stango, 2005; Krell, 2007). Building on recent literature review, we develop the following hypotheses:

H2a: Smaller firms use more outsourcing of financial accounting.

H2b: Smaller firms use more outsourcing of management accounting.

2.3. Accounting outsourcing and interaction of familiness and size

A small amount of research on accounting outsourcing in SMEs relies on transaction cost and postulates an increase in outsourcing the smaller a firm (access to resources — organizational capital) (Jones et al., 2001; Jayabalan et al., 2009; Everaert et al., 2010). In other studies, the interaction between variables (specificity of the asset, trust in external accountant, degree of competition, corporate strategy, firm size, firm age, education, and experience) and accounting outsourcing by example to SMEs was verified. The findings indicated that these relationships are significant (Kamyabi & Devi, 2011). This proposition seems not to hold for family firms (Pongelli et al., 2019). This is due to the importance of family social capital (SEW theory) (Memili et al., 2011; Hiebl, 2013). Yet, empirical evidence on accounting outsourcing of family firms is minimal. Barbera and Hasso (2013) found that commissioning external accountants increase family firms’ sales growth and survival rates. Other studies seem not to exist. Given that many family firms are also SMEs (Memili et al., 2011), we expect an interaction effect between family influence and firm size. Thus, we developed the below-stated hypotheses:

H3a: Family influence and size interact in their impact on outsourcing of financial accounting.

H3b: Family influence and size interact in their impact on outsourcing of management accounting.

3. RESEARCH DESIGN

3.1. Measurement, sample, and statistical inference

3.1.1. Dependent variables: Measuring outsourcing

Given that nearly all firms will commission external services to one degree or another, we define a dummy variable to indicate if firms use primarily external accounting services (Barbera & Hasso, 2013). Distinguishing between financial and managerial accounting leads to two dichotomous items, namely: *FA_OUT* indicates outsourcing financial accounting, and *MA_OUT* indicates outsourcing management accounting.

3.1.2. Independent variables

Firm size (*SIZE*) is often measured by the number of employees as is employed, for example, in economics (Bloom, Genakos, Sadun, & Van Reenen, 2012), finance (Beck, Demirgüç-Kunt, & Maksimovic, 2005), and accounting (Hiebl et al., 2015). Given the skewed distribution of firm size, we use log values for the analysis (*logSIZE*).

How to measure family influence (*F-PEC-P*) is still debated in the literature (Dawson & Mussolino, 2014; Dienemann & Stubner, 2017; Rau, Astrachan, & Smyrnios, 2018). The involvement of family owners in businesses is multidimensional. It encompasses several sub-scales (Frank, Kessler, Rusch, Suess-Reyes, & Weismeier-Sammer, 2017). Yet, for this study, it is appropriate to focus on organizational and structural components of familiness (Dienemann & Stubner, 2014). According to Hiebl et al. (2015), we employ the *F-PEC-P* scale. This is a sub-scale of the measurement concept of Klein, Astrachan, and Smyrnios (2005), which initially consists of dimensions of power, experience, and culture. The power dimension measures the governance and control structure of a family business through ownership of equity and the composition of management and supervisory boards. In line with Hiebl et al. (2015), we believe that the power dimension is the main factor influencing decisions on outsourcing financial and management accounting.

3.1.3. Control variables

Other control variables were not considered because we see the selected explanatory variables as sufficient to explain the studied phenomenon and test the hypotheses. Contingency studies show that size and family influence are two main factors impacting accounting (Chenhall, 2003; Hiebl, 2013).

3.2. Sample and statistical inference

To obtain the data, we developed a questionnaire. The online questionnaire has been divided into five parts. The first one deals with the characteristics of the enterprise, respondents, and data on family members in the board of directors and the supervisory board. The second part included questions on financial accounting and management accounting. The third part of the survey refers to the integration of financial and management accounting. The last two parts of the survey form asked about accounting tasks performed by the studied organizations and aspects of their environment.

The questionnaire was pre-tested with practitioners. We conducted surveys over the turn of the year 2017–2018 among enterprises operating in Germany and Poland. Germany and Poland are at different levels of economic development, but they have many business relations. The territorial proximity to Germany affects trade and cooperation between German companies and companies from Poland, as many subsidiaries of German companies are located in this country. This economic relationship with Germany has an impact on accounting practices in Poland. Another similarity is related to family businesses. Most of the firms in both countries are family firms. The vast majority of Polish family businesses are small and medium-sized enterprises, mainly micro civil partnerships

(over 80%), while in Germany, there is more diversification in this (Krenek, 2018). The surveyed population consisted mainly of small and medium-sized enterprises. A total of 10,383 email addresses were selected randomly from a database of firms. From that, 2,416 could not be forwarded, which reduced the number of emails to 7,967. A total of 231 usable questionnaires were collected, which leads to a response rate of 2.9%.

Still, many studies base statistical inference on the null hypothesis significance tests (NHST) framework despite this approach being severe (Ioannidis, 2005; Fanelli & Ioannidis, 2013; Kline, 2013). The American Statistical Association (ASA) recommends going beyond NHST (Wasserstein & Lazar, 2016; Wasserstein, Schirm, & Lazar, 2019). A proposed way beyond is to apply a Bayesian approach which estimates probabilities of hypotheses to be true given the data at hand instead of probabilities of getting the data if the null hypothesis is correct. The latter is not what researchers want to know (Kruschke & Liddell, 2018). Given that the Bayes-theorem formally estimates the following structure: posterior estimate is equal to the likelihood based on data plus the prior estimate, the result depends on the collected data and the prior probability of the hypothesis and estimates (Kruschke, 2015). It is recommended to use either weakly informative priors or priors based on previous knowledge for applied statistics. Since there is no combined knowledge of effect sizes for this research question, a weakly informative prior choice is the first choice. Since statistical methods usually deliver a point estimate and repeated measurement could result in different point estimates, it is an excellent statistical

practice to report confidence intervals of effect sizes in NHST. For Bayesian analyses, credible intervals are used. Confidence intervals (CI) represent the uncertainty of the estimated parameter given the data and prior probability, while a confidence interval represents the uncertainty of the interval itself (Lambert, 2018, p. 133). Credible intervals are estimated using highest posterior density regions (HPD) (Röver, 2018, p. 17). Bayesian approaches use variants of Markov chain Monte-Carlo simulation procedures for estimation. We use 2000 simulation runs with four chains in total for simulation while discarding the first thousand simulations in each chain to achieve more robust results (Kruschke, 2015).

The employed tests depend on the scales of the dependent variables. Given the dichotomous nature of the dependent variables, we employ Bayesian logistic regressions. An additional analysis of interaction effects between *F-PEC-P* and firm size complements the study. All regressions are performed using the “rstanarm” package in R (Goodrich, Gabry, Ali, & Brilleman, 2020).

4. RESULTS

4.1. Descriptive statistics

Table 1 depicts descriptive statistics for all dependent variables. We find that outsourcing financial accounting is more prevalent (13.4%) than for management accounting (4.8%). The sample includes many smaller and medium-sized firms and family firms, which indicates an appropriate sample structure for our study.

Table 1. Descriptive statistics for dependent and independent variable

Descriptive statistics	Dependent variables		Independent variables	
	FA_OUT	MA_OUT	SIZE	F-PEC-P
	External financial accounting service	External mgmt accounting service	Firm size	Family influence
N valid	231	231	230	231
N missing	0	0	1	0
Mean	0.134	0.048	226.26	1.029
Median	0	0	108.50	1
Std. deviation	0.342	0.213	401.11	0.727
Minimum	0	0	1	0
Maximum	1	1	3500	3

Source: Authors' elaboration.

The correlations in Table 2 indicate strong positive correlations between outsourcing of financial and management accounting, so one type of outsourcing comes along often with the other type. Both types of outsourcing are negatively correlated with firm size

which supports *H2a* and *H2b*. The negative correlation between size and family influence is an indicator for the interaction effect proposed in *H3a* and *H3b*.

Table 2. Correlations between variable

Statistics	FA_OUT	MA_OUT	logSIZE	F-PEC-P	
	External financial accounting service	External management accounting service	Firm size (log)	Family influence	
FA_OUT	Pearson Correlation	1	0.508	-0.267	0.000
	Bayes Factor		0.000	0.004	19.132
	N	231	231	230	231
MA_OUT	Pearson Correlation	0.508	1	-0.204	0.102
	Bayes Factor	0.000		0.154	5.761
	N	231	231	230	231
logSIZE	Pearson Correlation	-0.267	-0.204	1	-0.217
	Bayes Factor	0.004	0.154		0.078
	N	230	230	230	230
F-PEC-P	Pearson Correlation	0.000	0.102	-0.217	1
	Bayes Factor	19.132	5.761	0.078	
	N	231	231	230	231

Notes: Bayes factor: Null versus alternative hypothesis.

Source: Authors' elaboration.

4.2. Model results

We conducted logistic regressions for the two dependent variables and interaction effects. Figure 1 and Figure 2 depict the regression results (Panel A), histograms for the posterior distribution of effects of independent variables (Panel B), as well as interaction plots for *F-PEC-P* and *logSIZE* (Panel C). All models applied Hamiltonian Monte-Carlo simulation with No-U-turn sampler (Hoffman & Gelman, 2014) with 2000 runs in four chains and converged. Convergence statistics is shown in Figure 1 and Figure 2 as *Rhat* model fit was

evaluated with leave-one-out cross-validation (Vehtari, Gelman, & Gabry, 2017), which in every case resulted in good model fits (not printed).

The results of the logistic regression on outsourcing of financial accounting are reported in Figure 1. We see a clear negative impact of “size” which indicates that the larger the firm, the lesser outsourcing of financial accounting. The same holds on average for *F-PEC-P*, but the effect is smaller and not so clear cut because the credible interval also includes positive values, which means that some family firms utilize outsourcing of financial accounting services.

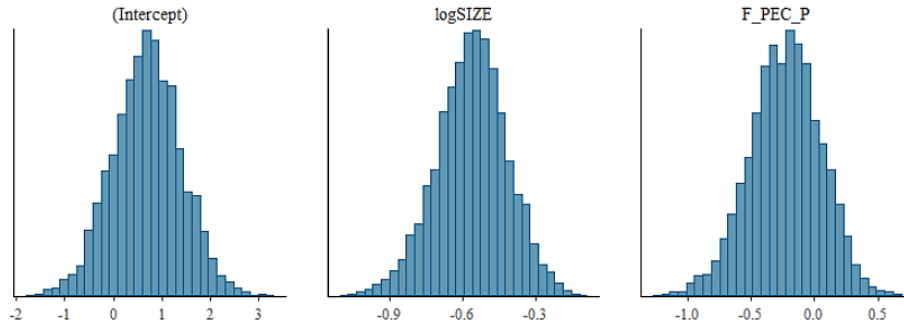
Figure 1. Results for logistic regression on financial accounting outsourcing (*FA_OUT*)

Panel A: Logistic regression results

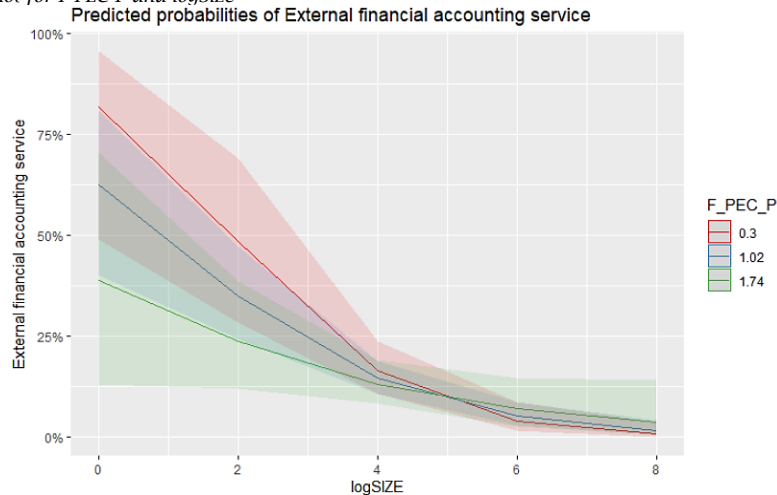
	Mean effect (log OR)	95% credible interval	pd	p-value one-sided	95% ROPE	% in ROPE	Bayes factor	Rhat	ESS
Intercept	0.686	[-0.605, 2.130]	83.08%	16.92%	[-0.181, 0.181]	12.97%	0.16	1.001	3157
logSIZE	-0.563	[-0.854, -0.281]	100.00%	0.00%	[-0.181, 0.181]	0.00%	159.628	1.001	2650
F-PEC-P	-0.231	[-0.803, 0.286]	79.47%	20.53%	[-0.181, 0.181]	39.75%	0.145	1.000	3547

pd = probability of direction
 ROPE = region of practical equivalence
 Bayes factor = ratio of likelihoods of hypothesis vs alternative hypothesis (no effect)
Rhat = convergence diagnostic, should be < 1.1
 ESS = effective sample size (efficiency of sampling, should be >> 1000)

Panel B: Histograms of posterior distribution of independent variables



Panel C: Interaction plot for F-PEC-P and logSize



Source: Authors' elaboration.

The next logistic regression estimates effects on outsourcing of management accounting. We find a negative effect for “size”, but a positive effect for “family influence” in Figure 2. This indicates more outsourcing decisions in case of more family influence.

Figure 1 (Panel C) and Figure 2 (Panel C) present the interaction effects between *F-PEC-P* and firm size for financial and management accounting, respectively. We see from the graphs that all larger firms use less outsourcing of financial and

management accounting independent of family influence. In smaller firms, family influence makes a difference: the larger the family influence, the lesser decisions on outsourcing (see the green line of high *F-PEC-P*). In total, the model results support *H2a* and *H2b* for firm size, while family influence leads to fewer outsourcing decisions for smaller firms (*H1a* and *H1b* in combination with *H3a* and *H3b*), while it makes no difference in larger firms.

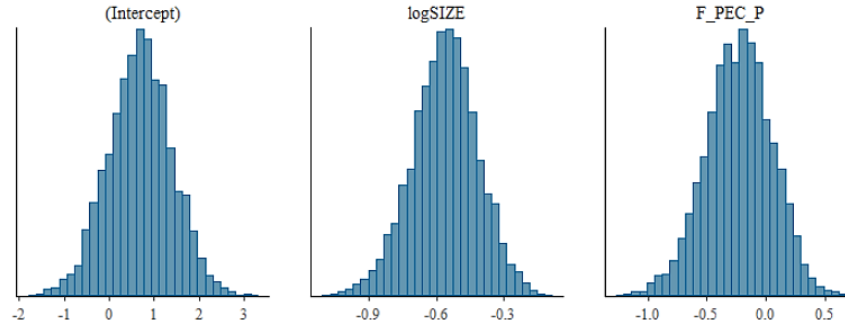
Figure 2. Results for logistic regression for the outsourcing of management accounting (MA_OUT)

Panel A: Logistic regression results

	Mean effect (log OR)	95% credible interval	pd	p-value one-sided	95% ROPE	% in ROPE	Bayes factor	Rhat	ESS
Intercept	-1.266	[-3.199, 0.768]	89.55%	10.45%	[-0.181, 0.181]	7.24%	0.309	1.002	3201
logSIZE	-0.564	[-0.971, -0.147]	99.88%	0.12%	[-0.181, 0.181]	1.42%	12.317	1.002	2555
F-PEC-P	0.378	[-0.453, 1.127]	82.85%	17.15%	[-0.181, 0.181]	22.15%	0.269	1.001	2746

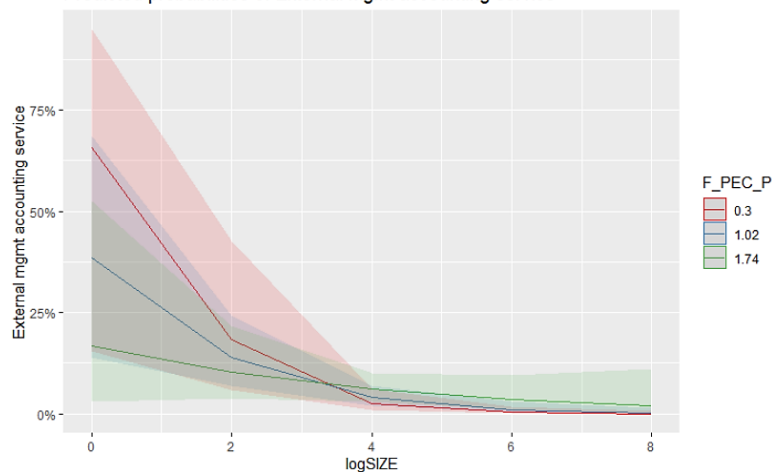
pd = probability of direction
 ROPE = region of practical equivalence
 Bayes factor = ratio of likelihoods of hypothesis vs alternative hypothesis (no effect)
 Rhat = convergence diagnostic, should be < 1.1
 ESS = effective sample size (efficiency of sampling, should be >> 1000)

Panel B: Histograms of posterior distribution of independent variables



Panel C: Interaction plot for F-PEC-P and logSize

Predicted probabilities of External mgmt accounting service



Source: Authors' elaboration.

5. CONCLUSION

Accounting provides information crucial for financial measurement, management processes, and decision making and is essential not only for large organizations, but also for SMEs and family firms (Hemmer & Labro, 2008; Eierle & Schultze, 2013; Wijekoon, Samkin, & Sharma, in press). However, in SMEs and family firms, decisions on in-sourcing or out-sourcing accounting seem to occur due to different causes (Ono & Stango, 2005; Memili et al., 2011; Pongelli et al., 2019). Socio-emotional wealth theory predicts that family firms are less professionalized in managerial practices, organization, and knowledge concerning accounting (Hiebl & Mayrleitner, 2019). To maintain control over accounts and financial information, firms with a higher level of family influence rely more often on

internal control mechanisms and less on external contractors providing accounting services (Hiebl et al., 2015; Moores & Mula, 2000). Moreover, based on TCT, smaller companies with a lower level of asset specificity of accounting functions, as well as with routine and simple accounting tasks transfer their functions outside to take advantage of scale and scope provided by specialized external units and their employees (Jones et al., 2001; Kamyabi & Devi, 2011). Although the concepts of SMEs and family firms overlap and interact in various ways, the above-mentioned conflicting theories provide no clear picture of accounting decisions in these types of firms. Thus, our study aims to enhance our knowledge of accounting functions in SMEs and family firms. The results of this study are summarized in Table 3.

Table 3. Summarized results of the study

Hypothesis	Dependent variable	Postulated effects	Results	Interpretation
H1a H1b	FA_OUT MA_OUT	F-PEC-P (-) F-PEC-P (-)	F-PEC-P (-) F-PEC-P (-/+)	Confirmed for H1a
H2a H2b	FA_OUT MA_OUT	logSIZE (-) logSIZE (-)	logSIZE (-) logSIZE (-)	Confirmed for H2a and H2b
H3a H3b	Interaction	Yes	Yes	Confirmed for smaller family firms

Source: Authors' elaboration.

Our study shows that size impacts and dominates decisions on outsourcing of financial and management accounting, which confirms H2a and H2b. This is in line with TCT as outsourcing offers small business owners to focus on their core business and transfer the accounting function to external contractors with the resources and knowledge to perform accounting tasks (Everaert et al., 2010). Outsourcing of accounting functions, including financial and management accounting, enables them to take advantage of the scale and scope of specialized external units and their employees (Ono & Stango, 2005). Moreover, all larger firms use less outsourcing regardless of family influence (Everaert et al., 2007). Interestingly, our results show that smaller family firms are less willing to outsource financial accounting and management accounting functions. In other words, the higher level of family influence in these firms leads to less outsourcing of accounting which is consistent with SEW theory (Kalm & Gomez-Mejia, 2016). The reasons are the need to preserve socioemotional wealth associated with social capital (Gomez-Mejia et al., 2011) and maintain control (Hiebl et al., 2015; Moores & Mula, 2000). Hence, the study reveals interesting effects of interaction between size and the level of family influence that confirm H1a and H1b combined with H3a and H3b for smaller firms.

Several arguments can explain the lower propensity for outsourcing in small family firms compared to small non-family firms. Family members and owners prefer intuitive, informal decision-making and having control over every important aspect of a firm. This is more easily done in small firms with lower complexity, more straightforward structure, and smaller scale. A need

to use external accounting services seems not to give any benefits. Compared to family members, a particular strand of research views non-family managers, even in small businesses, as more "professional" (Hall & Nordqvist, 2008; Bloom & Van Reenen, 2010; Hiebl & Li, 2020) and, therefore, weighs the costs and benefits of in-sourcing or outsourcing accounting.

The study contributes to the extant knowledge of accounting function in family firms and SMEs (Hiebl et al., 2015; Hiebl & Mayrleitner, 2019; Nandan, 2010; Songini et al., 2013). The paper widens both TCT (Brouthers & Nakos, 2004) and SEW (Gomez-Mejia et al., 2007) perspectives studying the different causes of SMEs and family firms' decisions on accounting outsourcing. Thus, our findings improve the understanding of accounting function in such firms (Lopez & Hiebl, 2015). We add a missing element on the impact of size and family interactions on the accounting function. Finally, the study may have implications for practitioners developing accounting systems in SMEs and family firms (Nandan, 2010).

One limitation of our study is the sample size. Replication with more data could enable the generalization of the results and a meta-analytic combination of study results. Moreover, we employ the F-PEC-P scale, a sub-scale of the measurement concept of Klein et al. (2005), consisting of dimensions of power, experience, and culture. It does not measure all aspects of family influence that may impact accounting more. Furthermore, an interesting direction for future research would be to understand SMEs or decisions on the internal organization of accounting or its outsourcing via long-term field studies conducted in these organizations.

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