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Women Entrepreneurs and Family Firm Heterogeneity: Evidence from an Emerging Economy

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Abstract Family firms add to the economic and social well-being of countries. While research on heterogeneity of family firms is gaining momentum, it has mostly been gender-neutral. The study fills this gap by examining heterogeneity of family firms owned and managed by women, in the context of a developing country—Brazil. The study draws upon the resource-based view of the firm to investigate the relationships between firm performance, family involvement, and financial resources at the start-up phase. An inductive analysis reveals two patterns. First, family firms that are started with the family achieve better performance than firms that are launched without the family and later evolve into a family business. Second, family firms that are funded with

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women entrepreneur's own savings achieve worse performance than family firms that are started with borrowed funds. The results are useful for strategic decision making in fostering family businesses headed by women and proactive public policies for future innovation to enhance the success of women entrepreneurs.

Keywords Family firm · Women entrepreneurship · Innovation · Heterogeneity · Performance · Brazil

1 Introduction

Family firms continue to play a significant role in the global economy (Chrisman et al. 2007; Ramadani and Hoy 2015). Thus gaining a better understanding of factors that shape family firm dynamics is important (Chrisman et al. 2005). Although research on family and nonfamily firm incongruities is well established (Chrisman et al. 2005; Pearson et al. 2008; McGuire et al. 2012), recent studies point to the existence of significant disparities within the family firms themselves (Howorth et al. 2010; Chrisman and Patel 2012; Chrisman et al. 2013; Kim and Gao 2013). These studies, however, are gender-neutral. Due to specific idiosyncrasies of women's entrepreneurship (e.g., the different contexts, such as family embeddedness or work-family issues) (Hughes et al. 2012), it is not clear how those gender-neutral findings may apply to firms owned and operated by women entrepreneurs. There is still a paucity of research addressing heterogeneity of family firms owned and managed specifically by women entrepreneurs (Jimenez 2009). The increasing involvement of women in family businesses, and the heterogeneity of women entrepreneurs have not been explored to a great extent (Diaz-Garcia and Brush 2012). This is surprising as female entrepreneurs are considered important for economic growth, innovation, and job creation worldwide (Kobeissi 2010), especially in emerging economies (Ramadani et al. 2015a).

We aim to fill this gap by focusing on family and nonfamily firms headed by women entrepreneurs. While most of the family firm studies have traditionally been focused on developed countries, there is little substantive research on private family firms from emerging economies (Kim and Gao 2013). In this study, we focus on Brazil, an emerging economy. Brazil may also be useful from a cultural perspective, as the country is known for its high level of "masculinity" (Hofstede 2001), a common phenomenon in many developing countries worldwide (Cruz et al. 2012).

The gender-neutral heterogeneity of family firms has been addressed in extant literature along a number of dimensions, such as family involvement, goals, and resources (Chrisman et al. 2013). This study investigates two of these dimensions, family involvement and resources, in relation to firm performance. These two aspects are considered some of the most important factors shaping women entrepreneurial processes (Diaz-Garcia and Brush 2012). Family involvement, a key characteristic differentiating family from non-family firms (Kim and Gao 2013), is investigated through its organizational role in the woman entrepreneur's business start-up. Firm resources are typically divided into a number of categories (e.g., physical capital, human capital, organizational capital, or process capital) (Habbershon and Williams 1999). The resource-based view (RBV) of the firm is used as the theoretical framework

for the study. More precisely, we focus on a specific type of physical capital—access to financial resources during the start-up phase. Substantial research in entrepreneurship indicates that resources are important to performance (Diaz-Garcia and Brush 2012), and that acquiring financial capital is essential, particularly for women (Verheul et al. 2006). Therefore, the principal research questions addressed in this study are: Do family firms owned and managed by Brazilian women entrepreneurs differ in terms of (1) the degree of family organizational involvement at the business start-up, and (2) the way women acquire financial resources for their business venture development? We believe the results of the study will provide new insights for entrepreneurial decision making, especially for woman entrepreneurs in developing countries.

As there is little research on the heterogeneity of family firms run specifically by women, particularly in the context of a developing economy, such as Brazil, the study adopts the inductive theory building approach (Locke 2007). Thus, we investigate the current practices of family firms and women entrepreneurs through formulating propositions. We believe the results of the study will provide useful insights on women-owned businesses with family involvement. These insights will provide the base for future innovations that are possible in the new digital age to engender a brighter future of women entrepreneurs in emerging economies. The rest of the paper is structured as follows. First, the theoretical background of this study is presented about women entrepreneurs and family business, followed by the Brazilian context where the study data was collected. Then the methodology used and results are explained, the findings are discussed, and implications of the study results, and finally limitations of the study and future research needs are articulated.

2 Theoretical Background

This study uses the resource based view (RBV) of the firm as its theoretical framework to investigate factors shaping the performance of family and nonfamily firms owned and managed by women entrepreneurs (Chrisman et al. 2005; Berrone et al. 2012). RBV states that firms are heterogeneous and it is the bundle of their resources that gives a firm competitive advantage and superior performance (Habbershon and Williams 1999; Chrisman et al. 2005). The RBV approach helps identify the resources and capabilities that may influence firms' performance (Habbershon and Williams 1999; Chrisman et al. 2005; Diaz-Garcia and Brush 2012).

This study focuses on a specific type of resource, the financial capital, needed at the start of a business venture. It considers two ways a woman entrepreneur could choose for funding her business: either using own savings or borrowing from others (i.e., getting loans from family, nonrelatives or institutions). Research indicates that resources are important to performance (Diaz-Garcia and Brush 2012), and that acquiring financial capital is particularly crucial for women entrepreneurs (Verheul et al. 2006). Emerging economies are no exception, as women entrepreneurs in these countries frequently find it difficult to acquire a business loan (Agier and Szafarz 2013; Ramadani et al. 2015b). Lack of access to financing drives women entrepreneurs to the informal sector, where women are more commonly necessity-driven entrepreneurs and get lower income from their business, although these women are often better educated than men (Williams and Youssef 2013).

Family involvement is a key characteristic differentiating family from nonfamily firms (Kim and Gao 2013). Therefore, the family embeddedness perspective (Aldrich and Cliff 2003) is useful as complementing RBV in explaining the idiosyncrasies of the family firm. The family embeddedness framework is applicable due to women's entrepreneurial activities being strongly rooted in family systems. Family members provide a combination of various resources, termed familiness (Habbershon and Williams 1999; Klyver 2007), which makes positive contributions to the firm (Sharma and Irving 2005).

3 The Brazilian Context

In Brazil, 70 percent of women-owned businesses are SMEs operating without any other employees and none report having more than 25 percent of their customers from other countries (Kelly et al. 2013). This may be because Brazil ranks at 123 out of 189 economies on the ease of trading across boarders (World Bank 2014). The large and fast-growing domestic market in Brazil as well as cultural factors (e.g., language differences with neighboring countries) may partially explain this phenomenon. Other contributing factors involve inadequate infrastructure and trade resources. This includes information available on trading outside the local market and businesses that would be most suitable for trade outside the home market (Kelly et al. 2013).

It is not easy to start a business in Brazil compared to other Latin American and Caribbean countries. According to the World Bank (2014), Brazil ranks 167 out of 189 economies on the ease of starting a business. It requires 11.6 procedures, takes 83 plus days, and costs over 4% of income per capita. From 2014 to 2015, the regulatory environment ranking improved only slightly from 123 to 120. The recession turned for the worst in 2015 and the economy was expected to contract by almost 25 percent (Leahy 2015). Inflation continues to be an issue and high interest rates have a negative effect on business growth. The central bank is continually increasing interest rates to hold down inflation, e.g., in 2016, the inflation rate was predicted to average 9.81 percent (www.inflation.eu). Additionally, there has been tumultuous leadership changes in the government in 2016.

Brazil is a patriarchal country. The traditional gender roles in Brazil are still strong and the culture is changing rather slowly in accepting women to maintain their careers after marriage. Prior to 1960, a woman could not work without her husband's approval and gave up a career at her husband's request (Figueira 1986). Today, women commonly keep their careers after marriage while maintaining their role as wives and mothers (Figueira 1986). However, women are still considered the last choice to operate the family business, and only considered when there is no male available in the family (Curimbaba 2002). Women hold professional positions at all levels and the number of those holding higher education degrees has significantly increased. According to the OECD, among the women holding university degrees, the employment rate was 81.5 percent (OECD 2012). However, Brazil has one of the highest earnings gap between men and women. Women with university degrees earn only 63 percent of what males do with similar degrees compared to the OECD average of 73 percent (OECD 2014). While the gender wage gap still exists, it is improving.

4 Method

Due to the paucity of research on heterogeneity of family firms headed by women, particularly in the context of developing economies, we use the inductive theory building approach (Locke 2007). Doing so first involves gathering and analyzing data to formulate inductively valid concepts, and then either integrating the entirety of findings into a new theory or linking the findings to an extant theory and moving the field beyond the current boundaries. Thus, this study develops propositions rather than testing hypotheses, however, it is quantitative in nature rather than qualitative. We follow Dana and Dumez's (2015) suggestion that a "comprehensive" approach combining positivist and constructivist paradigms is often a more fruitful methodology. (See Dana and Dana 2005, for a detailed discussion).

We collected data from a sample of 137 Brazilian women entrepreneurs for analysis, using a two-step cluster analysis and binary logistic regression modeling.

4.1 The Sample

The study utilized a self-administered questionnaire originally developed by Hisrich et al. (2006) with some adaptations, including three additional questions on family businesses. The questionnaire development was based on the double translation protocol (Brislin 1980). The questionnaire was first developed in English. A bilingual academic in entrepreneurship translated it into Portuguese. Then, another bilingual entrepreneurship faculty member translated the Portuguese version back into English. The two English versions of the questionnaire had no significant difference. Data collection took place throughout Brazil using online surveys and personal contacts with business organizations. One of the researchers spoke to business organizations about the study in person and urged members to complete the online survey. Of the 149 women contacted, 137 women responded, a response rate of 92%.

Table 1 presents sample characteristics. The majority of respondents were married (67.0%), mature (30+ years of age = 81.2%), and highly educated (junior college+ = 73.2%). The business types indicated most operate for the local market (retailing, food stores, etc. = 72.3%), relatively mature (3 years + = 66.7%), and woman entrepreneurs had leadership role (90.4%) and the majority ownership (67.2%), and the firms were almost evenly split between family business (51.3%) and non-family business (48.7%). The business was started by the woman entrepreneurs alone (50.7%) or with family members (33.0%), and mostly with own savings (88.3%). The respondents believe that they are generally skilled in overall human resource, innovation, and marketing areas but lack IT related modern technologies.

4.2 Dependent Variable

Firm Performance is the dependent variable, measured through the respondent's current business revenue. Business revenue was used as a measure of firm performance in other studies (Diaz-Garcia and Brush 2012; Mari et al. 2016). The Brazilian national average income per person was used to code if the income was higher (1) or lower (0)

Table 1 Sample characteristics

Characteristics	Categories	Frequency	Percent
Marital status:	Married	79	66.9
	Single	23	19.6
	Widowed/divorced/separated	16	13.5
Age:	Younger than 20	2	1.6
	20–29	21	17.2
	30–39	43	35.3
	40–49	31	25.4
	50 or more	25	20.5
Education:	Primary school	6	5.0
	High school	26	21.8
	Junior college	13	10.8
	Bachelor's degree	62	52.1
	Post graduate degree	12	10.3
Business type:	Retail	39	31.7
	Tourism	14	11.4
	Technology services	13	10.6
	Food store	12	9.8
	Internet sales	8	6.5
	Legal services	8	6.5
	Handicrafts	7	5.7
	Beauty salon	6	4.9
	Miscellaneous	5	4.1
	Cleaning services	4	3.3
	Healthcare	4	3.3
	Childcare	3	2.4
Business age:	2 years or less	41	33.3
	3–5 years	32	26.0
	More than 5 years	50	40.7
Leadership role:	Yes	113	90.4
	No	12	9.6
Business ownership (percent):	51% or more	80	67.2
	50% or less	39	32.8
Business ownership structure:	Family firm	58	51.3
	Non-family firm	55	48.7
Business start-up partners:	Alone	62	50.7
	With spouse	24	19.6
	With another family member	16	13.4
	With a non-family member	14	11.4
	Inherited or bought	6	4.9

Table 1 continued

Characteristics	Categories	Frequency	Percent
Business start-up funding:	Own savings	106	88.3
	Borrowed from family	8	6.7
	Bank loan	2	1.7
	Others	4	3.3

Each of the ordinal variables, *Age, Education,* and *Business age*, has been re-coded into two categories based on theoretical considerations and the frequency distribution

than the average income (approximately $950 USD per month; Trading Economics 2013).

4.3 Independent Variables

Business Ownership Structure coded to sort out family businesses (1) from non-family business (0). There is no agreement among researchers as to the definition of a family firm (Howorth et al. 2010); the definition of a family business is a complex issue (Ramadani and Hoy 2015). This study used Westhead's (1997) suggestion that an owner's "perception" is one of the elements that most closely captures the concept of a family business. Therefore, respondents were asked to use their own understanding of whether their business was a "family business" in responding to the survey items.

Business Start-up Partners was coded to differentiate if the woman entrepreneur started the business with family member(s) (1) or she started either alone or with nonrelatives (0) (Cooper and Saral 2013).

Business Start-up Funding was coded to differentiate if the woman entrepreneur started the business with her own savings (1) or if she financed the start-up with borrowed funds from family, nonrelatives, or institutions (0) (Mari et al. 2016).

4.4 Control Variables

The literature considers business experience, educational level, and management skills as typical categories of human capital (Prasad et al. 2013). A previous study reported significant relationships between these three dimensions of human capital and firm performance (Manolova et al. 2007). Thus, this study controlled human capital dimensions for their possible impact on family business dynamics.

Business Experience was used to differentiate weather a woman entrepreneur had been in business longer than three years (1) or otherwise (0) (Mari et al. 2016).

Educational Level was used to indicate whether the respondent had the education level of at least a high school (1) or otherwise (0). Formal education can increase women's access to knowledge that can help in launching and running a business (Pathak et al. 2013; Ramadani et al. 2013).

Management Skills category was used to differentiate whether the respondent's self-rated start-up skills were good to excellent (1), or poor to fair (0) (Rey-Marti et al. 2015).

The study also controlled the respondent's age, as age has an important influence on entry into entrepreneurship and subsequent stages of the business venture (Pathak et al. 2013). *Age* was categorized if the entrepreneur was 40 and older or otherwise (Mas-Tur et al. 2015).

4.5 Data Analysis, Propositions, and Results

Descriptive statistics for the sample (means and Pearson correlation coefficients) are presented in Table 2).

Collecting behavioral and attitudinal data from self-reported questionnaires at one point in time can lead to common method bias (Podsakoff et al. 2003). Therefore, Harman's one-factor test on all observed variables was applied (Lindell and Whitney 2001). The exploratory factor analysis produced the unrotated factor solution with four factors, accounting for 73.38% of the total variance explained. If common method bias is present, a single factor is extracted and accounts for most of the variance. Since such single factor solution did not emerge, it was an indication that the common method bias is not prevalent in this study.

To explore potential heterogeneity among family firms, the study first performed a two-step cluster analysis. Its objective is to ascertain whether natural groupings (clusters) exist within the data set. The two-step cluster analysis combines cases into pre-clusters that are then considered as single cases (Zhang et al. 1997). In the second step, standard hierarchical clustering is applied to the pre-clusters. The Two-Step clustering requires neither a proximity table (like hierarchical classification) nor an iterative process (like K-means clustering), but is a one-pass-through-the-dataset method. The algorithm assumes that the continuous variables are independent and follow a normal distribution, and that the categorical variables are independent and follow a multinomial distribution. However, the algorithm is robust to violations of both the independence assumptions and the distributional assumptions (Chiu et al. 2001). It automatically determines the number of clusters based on either the Schwarz Bayesian Criterion (BIC) or the Akaike Information Criterion (AIC). In our analysis, we used BIC because it is more appropriate than AIC when the goal is exploration, rather than prediction (Kuha 2004). A researcher may also determine the number of clusters "manually" by examining the Ratio of Distance Measures (Chiu et al. 2001). In our study, we found that three clusters best maximize the homogeneity of cases within clusters while also maximizing the heterogeneity between the clusters.

The most important predictor of the cluster membership was *Business Start-up Partners*, followed by *Business Ownership Structure*. Considering the strong discriminatory power of the two variables, the sample was divided into four subsamples (Table 3). The first split was based on current *Business Ownership Structure* (Group 1), which divided firms on: *family firms*—Group 1a (58 firms, including 32 *start-ups with family* involvement and 26 *without family* involvement), and *nonfamily firms* - Group 1b (54 firms, comprising of 9 *start-ups with family* involvement and 45 *without family*

Table 2 Means and correlations

Variable	Mean	N	1	2	3	4	5	6	7
1. Firm performance	0.51	110	1						
2. Business ownership structure	0.51	113	−0.01	1					
3. Business start-up partners	0.36	122	0.13	0.40**	1				
4. Business start-up funding	0.88	120	−0.09	−0.06	−0.00	1			
5. Business experience	0.67	123	0.38**	0.17	0.10	0.12	1		
6. Educational level	0.73	119	0.26**	0.04	0.03	−0.05	−0.06	1	
7. Perceived management skills	0.73	122	0.26**	−0.14	0.04	0.12	0.05	0.13	1
8. Age	0.46	122	0.25**	0.09	0.13	−0.13	0.19**	−0.16	−0.07

* $p < 0.05$; ** $p < 0.01$ (2-tailed)

Table 3 Sample grouping

Number of firms	(Group 2) Business start-up partners		Total
	With family	Without family	
(Group 1) Business ownership structure			
Family firm	32	26	58 (Group 1a)
Non-family firm	9	45	54 (Group 1b)
Total	41 (Group 2a)	71 (Group 2b)	112

involvement). The second split was based on *Business Start-up Partners* (Group 2), which divided firms on: *start-up with family*—Group 2a (41 firms, including 32 *family* and 9 *non-family* firms), and *start-up without family*—Group 2b (71 firms, containing 26 *family* and 45 *non-family* firms).

Further, we explored the relationships between the explanatory variables and firm performance. Due to the binary (0/1) nature of the dependent variable, four binary logistic regressions were performed (Table 4).

Similar to regression analysis, models for binary response extend the principles of generalized linear models in order to give a better treatment of dichotomous dependent variables (Hair et al. 2010). The predictor variables can be metric or nonmetric, as in the multiple linear regression. When the dependent variable is binary, discriminant analysis (DA) would also be appropriate. However, DA relies on strictly meeting the assumptions of multivariate normality and equal variance-covariance matrices across groups; such assumptions that are not met in many situations (Hair et al. 2010). Logistic regression does not require these strict assumptions; and even when these assumptions are not met, it is much more robust. Since all our variables are categorical, the choice of the binary logistic regression is even more justified.

When two or more predictors are highly correlated, this is termed multicollinearity. The presence of multicollinearity affects the statistical tests of the coefficients of the model. The coefficients may have very high standard errors and low significance levels. This also generates their incorrect estimates, even with wrong signs (Hair et al. 2010). The presence of high bivariate correlations (generally at least 0.30) is the first indication of the multicollinearity problem. In Table 3, only one out of the 21 correlation coefficients between the explanatory variables is above 0.30 which indicates that multicollinearity may not be a concern. We further tested more formally for multicollinearity and calculated variance inflation factors (VIFs) for the explanatory variables. The VIFs were all below 1.5, again suggesting no apparent problems with collinearity. Values of VIF exceeding 10 are usually regarded as indicating multicollinearity (Hair et al. 2010) but in weaker models, which is often the case in logistic regression, value above 2.5 may be a cause for concern (Allison 1999).

To address the possibility of heteroscedasticity (when the errors variances are not constant for all observations), heteroscedasticity-robust standard errors were estimated (Huber 1967; White 1980). The ordinary least squares (OLS) standard errors are no longer valid in the presence of heteroscedasticity; they are biased and inconsistent and the estimates are inefficient, therefore, the data must be tested for its presence and,

Table 4 Logistic regression results

	Model 1a	Model 1b	Model 2a	Model 2b
Dependent variable				
Business performance	Family firm	Non-family firm	Business start-up with family	Business start-up without family
Independent variables				
Business start-up partners	1.972** (0.89)	−0.686 (0.87)		
Business ownership structure			1.597 (1.33)	−1.422** (0.68)
Business start-up funding	−3.566** (1.72)	−0.137 (1.01)	−0.645 (1.36)	−1.775* (0.96)
Control variables				
Business experience	3.638** (1.46)	1.882** (0.82)	3.188** (1.46)	2.288*** (0.80)
Educational level	2.279*** (0.81)	1.647 (1.08)	3.046** (1.41)	1.159 (0.84)
Perceived management skills	2.203** (1.06)	0.522 (0.83)	2.812* (1.51)	0.888 (0.69)
Age	2.039** (0.85)	1.547* (0.79)	1.973 (1.36)	1.600** (0.64)
Constant	−4.655*** (1.80)	−2.982** (1.47)	−7.743*** (2.39)	−1.614 (1.25)
−2 Log likelihood	40.64	51.82	26.74	65.27
Cox and Snell R^2	0.45	0.29	0.48	0.32
Nagelkerke R^2	0.61	0.39	0.64	0.42
Model χ^2	31.45***	17.41***	23.87***	24.70***
Cases correctly predicted (%)	84.6	78.0	86.5	78.5
n: start-up with family (Models 1a,b); family firms (Models 2a,b)	32	9	32	26
n: start-up without family (Models 1a,b); non-family firms (Models 2a,b)	26	45	9	45

Standard errors in the parentheses (heteroscedaticity corrected)
Regression coefficients: *$p < .10$; **$p < .05$; ***$p < .01$; two-tailed tests

if detected, a remedy must be applied. The most widely-used procedure, available in most software packages (see Long and Ervin (2000) for details), is the Huber-White estimation (Wooldridge 2003; p. 258). It is applied in this study.

Overall, all four models showed significant results (Model 1a: $\chi^2 = 31.45$, $p = 0.00$; Model 1b: $\chi^2 = 17.41$, $p = 0.00$; Model 2a: $\chi^2 = 23.87$, $p = 0.00$; and Model 2b: $\chi^2 = 24.70$, $p = 0.00$). The pseudo-R^2 values were fairly high and ranged from 0.29 (Cox and Snell R^2) to 0.64 (Nagelkerke R^2).

In Model 1a (Family firm), the variable *Business Start-up Partners* was positively related to *Firm Performance* ($\beta = 1.972$; p-value = 0.03).

Based on this result, the following proposition is forwarded:

Proposition 1 *Family firms owned and managed by Brazilian women entrepreneurs that were started with the family achieve better performance than family firms that were started without the family (i.e., either alone or with the non-relatives) and only later evolved into family businesses.*

It is well-known in extant literature that family support does have a positive effect on firm performance (Welsh et al. 2014). For example, Mari et al.'s (2016) study found that strategic support from the family is positively related to female-owned business performance. Other researchers also reported that family support can positively influence firm performance (Verheul et al. 2006; Chang et al. 2009; Powell and Eddleston 2013), while lack of it can have negative effects (Sharma 2008). However, Proposition 1 extends the theory of the family firm (Chrisman et al. 2005) by pointing to the unknown existence of heterogeneity in the family firms owned and managed by women entrepreneurs, although with a limited sample in the context of Brazil. This heterogeneity becomes evident along the dimension of the family involvement at the start-up. Family firms started with the family differ from firms that were started without the family and only later transformed into family businesses. Proposition 1 suggests that Brazilian women entrepreneurs tend to achieve better performance when their businesses were started with the family and continued as family businesses. Firms that were started without the family's involvement, and evolved into family businesses at a later stage of business development, achieve worse performance. Transfers from family business to non-family business, and *vice-versa*, happen all the time (Ramadani and Hoy 2015). Our results shed additional light on the consequences of such developments.

As a robustness check, a mirror image of Proposition 1 was derived from Model 2b (Business start-up without family). In this model, the variable *Business Ownership Structure* is negatively related to *Firm Performance* ($\beta = -1.422$; p-value = 0.04), which suggests:

Proposition 2 *Firms that are started by Brazilian women entrepreneurs without family involvement and later evolve into family firms achieve worse performance than firms that remain nonfamily firms throughout all phases of their business development.*

Proposition 2, while in line with Proposition 1, looks at the relationships between business start-up, family business ownership, and firm performance from the reverse perspective. The results showed that it is not a good idea for a Brazilian woman entrepreneur to start her business without family involvement (i.e., to start the business alone or with the help of non-relatives) and later convert it into a family business.

Proposition 2 is in agreement with findings from previous studies. For example, Mari et al. (2016) suggested that if family members become unsupportive, this can negatively influence firms' outcomes. Similarly, Sharma (2008) states that such an imbalance and negative spillovers between the entrepreneur and her family can harm the business. McClelland et al. (2005) noted that resistance from the family may be one of the greatest barriers for female entrepreneurs and it is particularly aggravated in developing countries, such as Brazil. Lussier and Sonfield (2010) indicated that interpersonal dynamics, such as conflicts and disagreements among family members

do take place frequently. Such conflicts among family members may particularly increase with numbers of different generations involved in the business (Lussier and Sonfield 2010). This may be due to family members joining the firm at a later stage, with different values and cultural norms. Some of the conflicts in the family business are so complex that it is necessary to engage external consultants to solve them (Ramadani and Hoy 2015).

Chang et al. (2009) noted that not all families may be willing to provide support for the benefit of other family members. To do so they would need to either possess a high level of commitment or have possibilities to receive benefits from the success of the family business. Family members who join the woman's business at a later stage may not have such commitment or benefit outlook and this, in turn, may negatively affect the firm's performance. Proposition 2 is also consistent with the "founder effect" hypothesis (Dyer et al. 2012) which posits that business performance is essentially determined by the founder, and not by the family involvement. If, for example, the family gets involved at a later stage of business development, this may actually make things worse because it is the founder, with her unique mix of skills, experience, and motivation that make the firm successful, while inputs from the family are much less relevant, and may be even harmful.

What renders Propositions 1 and 2 new in terms of theory of the family business is that they show it matters whether family members are involved in business or not, and—if so—at what stage. Dyer et al. (2012) called for including time-based variables in future family business studies. These researchers noted that there might be different dynamics in family firms depending on whether they are funded by all family members from the beginning or whether some family members are brought in later. The results of our study answer this call, in part. We show that firms that were started with family involvement are better off when the family support continues throughout the stages of business development. Conversely, firms that are started without family involvement should remain non-family ventures. Thus, Propositions 1 and 2 are in line with the work of Westhead and Howorth (2007) that family firm sustainability requires, among other things, continuous family involvement.

Propositions 1 and 2 explored the relationships between business start-up partners, business ownership structure, and firm performance. The study also investigated the link between funding of business start-ups and firm performance. Among family firms (Model 1a), the variable *Business Start-up Funding* is negatively related to *Firm Performance* ($\beta = -3.566$; p value $= 0.04$). Therefore, we suggest the following:

Proposition 3 *Family firms that were funded by Brazilian women entrepreneurs' own savings, tend to achieve worse performance than those funded with borrowed funds from family, non-relatives, or institutions.*

A similar result was derived from Model 2b, applied to business start-ups without family. In this model, the variable *Business Start-up (funding)* is also negatively related to *Firm Performance* ($\beta = -1.775$; p value $= 0.06$). Thus, the following is advanced:

Proposition 4 *Firms that were started by Brazilian women entrepreneurs without family involvement and were funded by women's own savings tend to achieve worse performance than those funded with borrowed funds from family, non-relatives, or institutions.*

We found no significant relationships between *Business Start-up Partners* and *Business Start-up Funding* and *Performance* of non-family firms (Model 1b). Neither we found significant relationships between *Business Ownership Structure* and *Business Start-up Funding* and *Performance* of firms that were started with family (Model 2a). It seems that the heterogeneity exists only among family firms (Model 1a) and among firms that started without family (Model 2b). Further research is needed in order to explain this phenomenon.

The results showed that Brazilian women entrepreneurs who funded the business ventures with borrowed money rather than with their own savings had a better performance. This applies to all firms, i.e., those that started with family and remained a family firm and those that started without family and later either evolved into family firms or remained non-family firms.

Mari et al. (2016) hypothesized that financial support from family is positively related to female-owned business performance. However, they could not find support for their hypothesis; rather a negative relationship between the two variables was found. This result may be due to the limited financial resources of the family that causes the business to be slow growing, with a poor prospect of making profit. Several studies suggested that acquiring capital for the business start-up is more difficult for women than men (Verheul et al. 2006). Rey-Marti et al. (2015) found that when a woman's motive to start a business venture is merely to strike a work-life balance by combining work and family commitments, she has a limited prospect for business success. This might partially explain the above results. Women who want to start their business, such as necessity-based entrepreneurs, but cannot secure external funding, are forced to use their own limited funds which may later hinder their business performance.

The new boundary conditions to theory of the family business, which we identified in this study, can also be explained in the context of Brazil. In this country, necessity is the main factor that motivates women to become entrepreneurs. Sixty-three percent (63%) of women start their business ventures out of necessity compared to 38% of their male counterparts (Bulgacov et al. 2014). The role of women entrepreneurs in Brazil is mainly to generate a complementary source of income in addition to what their husbands or other male family members already provide. The task of Brazilian woman entrepreneurs is precarious as they have to find an equilibrium in their personal, professional, and family lives (Nassif et al. 2012). Traditions of the Brazilian society and culture pressure women to look after the home and take care of their children (Bulgacov et al. 2014). As a result, women entrepreneurs who start supplementing their family finances may face one of two scenarios. Either what a woman contributes to the family finances is insignificant or the woman's business may turn out to be a success. In the first case, the woman's business is usually stagnant. Therefore, any additional involvement or help from the rest of the family is not necessary nor even considered. In the second scenario, her business earnings may exceed the income provided by male members of the family.

If a woman's venture is successful, the business may require more of the woman's involvement in running the business (which magnifies the potential work-family conflict) and/or more employees. The female entrepreneur may face a choice between involving the rest of the family or continuing to work alone or with non-relatives. The usual choice of most Brazilian women entrepreneurs is to involve the rest of

the family so that they could benefit from the firm's increased revenue. Admittedly, a woman entrepreneur could hire non-relatives to assist in running the business but this would be most unusual in Brazil. Families in Brazil play a key role in motivating entrepreneurs and even identifying business opportunities for them. Therefore, a woman entrepreneur is bound not only by her moral obligation but also by tradition to adhere to the family needs (Rivera 2007). These two arrangements will produce different outcomes. If the woman starts the business alone, and later involves her family, there is a tendency for the business to be managed with fewer controls and with hiring practices that are based on the family ties and considerations. This may result in lower business performance compared to the scenario in which the woman would hire only non-relatives to help her with the flourishing business. Propositions 1 and 2 fit this line of reasoning.

Brazil lacks institutional financial support for start-ups, which leaves most of the risks to the founders. The use of bank loans for venture creation in Brazil is among the lowest in Latin America, while the use of personal savings is very high (Rivera 2007). Once the business is developed, the entrepreneurs may use more diverse sources of capital but, in reality, they are still very much dependent on their own funding capabilities (Rivera 2007). Thus, keeping her personal savings intact as a backup for any unforeseen problems in the future, while attempting to finance her business development with borrowed money, seems to be a safer option for Brazilian woman entrepreneurs. In this case, a female entrepreneur has fewer concerns over invested resources from her personal savings (Bulgacov et al. 2014).

The control variables, an individual's age (*Age*) and the number of years in business (*Business Experience*), are positively related to firm performance in all four models. The Gender Global Entrepreneurship and Development Index (GEDI 2014) found low levels of quality, accessible childcare in Brazil, which provide some reasoning why women entrepreneurs enjoy better firm performance at age 40 and above. An individual's education (*Educational Level*) matters significantly and positively both in family firms (Model 1a) and in firms that started with the family (Model 2a). The educational level is also positively, but not significantly, related to performance of nonfamily firms and of those firms that women started alone or with non-relatives. It seems that education matters more in cases when the woman entrepreneur's firm has strong family roots and connections. The variable *Management Skills* is significantly positively related to firm performance for family firms (Model 1a) and for firms that were launched with the family from the beginning (Model 2a). Management skills is also positively, but not significantly, related to performance of nonfamily firms and businesses that women started alone or with non-relatives.

5 Discussion

This study addresses heterogeneity of family firms owned and managed by women entrepreneurs in an emerging economy, thus partially filling a gap in the literature. Most research on disparities within the family firms is gender-neutral (Howorth et al. 2010; Chrisman and Patel 2012; Chrisman et al. 2013; Kim and Gao 2013), while there is still a paucity of research addressing heterogeneity of family firms headed by

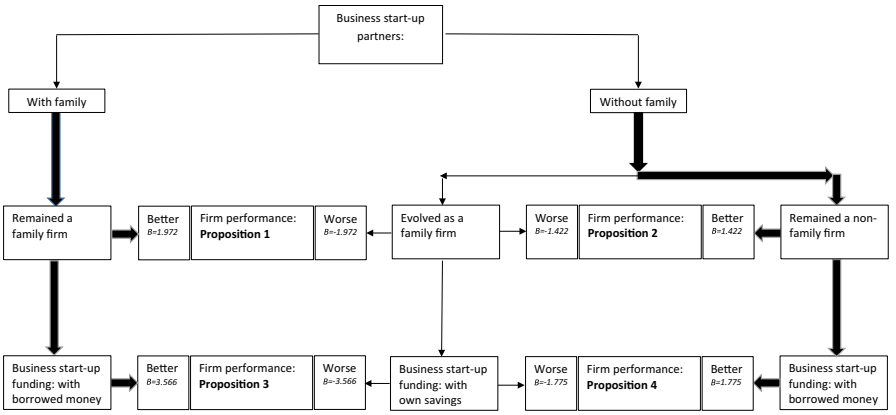

Fig. 1 The decision tree for business start-ups by Brazilian women entrepreneurs: preferred courses of action

women (Jimenez 2009). The study examines the family firm heterogeneity along two dimensions—the degree of family organizational involvement in the business start-up and ways of acquiring the necessary start-up capital chosen by women entrepreneurs—and their impact on firm performance. The study is conducted in the context of an emerging economy, Brazil. The resource-based view (RBV) of the firm is used as an overarching theoretical framework enhanced with an additional lens offered by the family embeddedness perspective. Due to the aforementioned lack of research on the heterogeneity of family firms run specifically by women, the study adopted the inductive theory building approach (Locke 2007). The findings showed that heterogeneity of family firms owned and managed by Brazilian women entrepreneurs is substantial and multifaceted.

The study identified a number of patterns in the relationships among the variables of interest. The patterns are included in four propositions describing the impact of family involvement and financial resources on the performance of firms owned and managed by Brazilian women entrepreneurs (Fig. 1).

Proposition 1 showed that firms owned and managed by Brazilian women entrepreneurs, that are started with the family and remained family business, achieve better performance than firms that are now family firms but began without family involvement (i.e., either alone or with non-relatives). Researchers have shown that support from the family is, overall, positively related to female-owned business performance (Verheul et al. 2006; Chang et al. 2009; Powell and Eddleston 2013; Mari et al. 2016); while a lack of support can have negative effects (Sharma 2008). Researchers confirm that family firm sustainability requires continued family involvement (Westhead and Howorth 2007), although these studies are gender-neutral and do not focus explicitly on women entrepreneurs. What is surprising is the finding that family support is not always an obviously positive factor.

Proposition 2 confirmed that the reverse perspective is also true: firms that are started by Brazilian women entrepreneurs without family involvement and later evolve into family firms achieve worse performance than the firms that stay nonfamily firms. Thus,

the first two propositions demonstrated that it is not a good idea for a Brazilian woman entrepreneur to start her business without family involvement (i.e., to start it alone or with the help of non-relatives) and at a later stage to add the family in the business. If a woman starts her business without family involvement, it is better to stay the course and not transform the business to family business.

Propositions 3 and 4 suggested that it is better for a Brazilian woman entrepreneur to fund her business start-up with family or others' financial involvement rather than with her own savings. Similarly, Smith-Hunter and Leone (2010) in a sample of 33 women in São Paulo found that women are more likely to have financial difficulties during the launching phase of their businesses due to relying on personal savings.

Summarizing, the study identified three preferred scenarios (courses of action) for Brazilian women entrepreneurs (emphasized with thicker, bold, arrows in Fig. 1):

1. If you start your business with the family involvement, continue as a family business;
2. If you start your business without the family involvement, remain a non-family firm (i.e., never change to a family one);
3. For your business start-up funding, always used borrowed money, never own savings.

6 Conclusion

Brazilian women entrepreneurs play an important role in economic growth, even though women entrepreneurs predominately have one-person businesses. Combined with the economic crisis, and a traditional male-dominated society, women-owned businesses in Brazil may be facing an uphill battle to survive and prosper. Public policymakers and economic development agencies should be taking actions to alleviate barriers to success as women-owned businesses have the ability to be a major force in improving the economic conditions of the country and provide a degree of economic stability. Additional financial support during the economic crisis should include subsidies to women owned businesses. Micro-loan programs with low interest rates or crowd funding, especially in rural areas of Brazil, could be implemented with assistance from international banks.

Mentoring programs by successful women entrepreneurs could be backed by the government at all levels. The role of the family in the success of the business cannot be overstated. Policy decisions for training to encourage positive family involvement in the business start-up would be encouraged. This might involve educating families on proactive behavior that provides assistance rather than overwhelming the women business owners. Assistance with loans, managerial skills, and mentoring from experienced family business owners that have successful start-ups are different ways that could have a positive impact on the success of women business owners in the start-up stage and beyond. Providing educational opportunities in entrepreneurship in higher education and starting these classes even in secondary education would be a step forward for Brazil. Partnering with world education organizations and foundations that might assist in funding these efforts should also be explored.

The results of study may be useful for decision making by women entrepreneurs in emerging economies (particularly those with strong masculinity features) who currently own and manage a family business or are contemplating bringing their family members into their business. Government policies tailored to promoting women entrepreneurship should take into account that family firms cannot be simplistically viewed as a homogeneous entity. Family firms do differ along various dimensions, such as whether or not the family participated in the business start-up, or whether or not a woman entrepreneur used her own savings to launch her business. Precise targeting of those segments will make government policy decisions more efficient and effective.

7 Limitations and Future Research Needs

This study was based on a survey conducted online and mostly through support organizations and networks of women entrepreneurs and personal contacts. Therefore, people who can use the Internet and belong to networking organizations strongly influence the results. Future studies should be considered in the sample of women entrepreneurs who do not use the Internet on a regular basis. Other means to gather data should also be included, such as representative samples throughout Brazil in rural environments outside of the major cities of São Paulo and Rio de Janeiro. Matched gender-based samples are recommended, since most of the businesses owned by Brazilian women entrepreneurs are family firms. Future research can investigate other family firm dynamics than family support, such as family expectations or long-term orientation, and the effect on their firm performance. Additionally, how the capital raised by the firm is used within the family dynamic by men and women would be interesting to investigate. For instance, do women spend their funds more on children and domestic needs than men? Is there a difference between men and women in funding priorities depending on when they join the business?

Longitudinal studies can investigate the impact of changes in the lifestyles and culture along with government initiatives on Brazilian women entrepreneurs over time. It would be interesting to explore how the changes that encourage more women's entrepreneurial activities will affect women entrepreneurs in Brazil in the future. The role of the economy and inflation on the impact of women-owned businesses could be explored more deeply over time in future studies. This study is focused on the Brazilian context. To enhance the generalizability of the study results, similar studies should be conducted in the various emerging economies.

As the sample characteristics of this study showed (see Table 1), many businesses owned and/or operated by women entrepreneurs in Brazil are traditional business types catering mostly for the local market. In order for these businesses to grow and become a main stream economic force in the country, women entrepreneurs must modify their business models through digital transformation based on innovations such as mobile-commerce, social-commerce, artificial intelligence enabled applications, Internet of Things, smart sensors and robotics, cloud computing applications, 3-D technologies, collective intelligence and funding, and the like (Rogers 2016). Old business models emphasized economies of scale and scope, vertical integration and investing in tangible

assets, serving many customers with many employees, operational efficiency and cost minimization, and meeting the current customers' needs. New business models that Brazilian women entrepreneurs should pursue through innovation should emphasize agility over scale of the firm, economies of network, horizontal collaboration and investing in intangible assets, no marginal cost over cost minimization, serving not only local customers but global customers through online marketing, serving many customers with a minimal number of employees, and providing new customer value (experience, participation in co-creation, hedonic needs, etc.) (Lee 2015; Lee and Trimi 2017). Such innovative business models can support operations of tourism, technology services, handicraft, and even healthcare to expend beyond the local market. Such transformational innovations will provide abundant new opportunities to Brazilian women entrepreneurs to start, grow, and harvest many successful businesses in the future.

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