

Covid-19 and family businesses' resiliency: Does generation of management matter?*

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Abstract

This paper documents the differential impact of the Covid-19 pandemic on family businesses (FBs) and examines whether the generation of current management influences their resiliency. It also indirectly tests whether the idea of *transgenerational entrepreneurship* helps some family firms to survive the pandemic. Using a unique dataset of firms collected from 75 countries in the second half of 2020, we find that multigenerational FBs (those who are managed by second generation family members or beyond) did not perform any better than first-generation FBs. However, we find that multiple-generation FBs (those managed by several generations in various capacities) are less likely to suffer a revenue decline despite the general downturn of businesses during the pandemic. This appears to be driven by their increased collaboration, creativity, and readiness to address the challenges of the pandemic. These strategies allowed multiple-generation FBs to perform similarly as non-family businesses, which are in a much better financial position at the start of the pandemic. These findings indicate that although resilience is in the DNA of family firms, inter-generational collaboration appears to make them more resilient in times of crisis.

JEL Classification: M1, M2, M5

Keywords: family business, multigenerational, multiple-generation, resiliency, Covid-19

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1 Introduction

The Covid-19 pandemic is found to have unequal and uneven impact across sectors, regions, workers, and firms (Puy & Rawdanowicz, 2021; Bloom, Fletcher, & Yeh, 2021; Crossley, Fisher, & Low, 2021). For instance, while certain industries, including restaurant and travel industry, suffered significantly, others such as online retailing, workplace solutions, and supermarkets and liquor stores, saw their revenues soar to unprecedented levels. Family businesses (FBs) are not immune to the impact of the pandemic. They are central to the US and global economy, accounting for about 60 percent of jobs in the US and contributing more than 50 percent to the US economy alone (Ude, 2016). Yet, family businesses are generally left out of the discussion on the impacts of Covid-19 and remain under-analyzed because of lack of detailed information.

The inherent resiliency of family businesses is well documented in the literature but the Covid-19 pandemic tests the attributes that give them a competitive edge (Englisch & Ambrosini, 2020). Liberti (2020) notes that available data indicate that family firms' Covid-19 experience differs substantially from that of non-family businesses (NFBs), whether large or small, because the former tend to have long-term horizons, which often lead to less debt, a diversified portfolio, and a nonmonetary definition of success at times. Moreover, there are significant variations among family businesses that can potentially influence their resiliency during times of economic crises. One important distinction is between multigenerational family businesses (MFBs) — those which are managed in part or in full by second generation family members or beyond — and first generation family businesses (FGFBs). Multigenerational family businesses can be very different from first-generation family businesses because they are, according to Liberti (2020), deemed as “survivors” - they have “survived” the volatilities and downturns of the economy and have learned the appropriate business strategies through experience. MFBs tend to be more committed to longevity and the preservation of generational legacy. This long-term horizon allows them to explore new products or new areas of business which may not pay off for years.

To describe the success of MFBs, scholars associated with the Successful Transgenerational Entrepreneurship Practices (STEP) project linked entrepreneurship and family business research (Basco, Calabrò, & Campopiano, 2019) when they coined the term *transgenerational entrepreneurship*, which intertwines corporate entrepreneurship in the context of family firms and the effect of the owning-family on the firm (Nordqvist & Melin, 2010). Transgenerational

entrepreneurship refers to processes through which a family uses and develops entrepreneurial mindsets and family-influenced capabilities to create new streams of entrepreneurial, financial and social value across generations (Habbershon, Nordqvist, & Zellweger, 2010; Basco et al., 2019). This, according to Basco et al. (2019), is based on two assumptions: 1) family involvement in the firm is a source of unique and inimitable resources and capabilities or *familiness* (Habbershon et al., 2010), and 2) firms' entrepreneurial orientation encompasses the processes, practices, and decision-making activities (Lumpkin & Dess, 1996) associated with managing resources and capabilities in an entrepreneurial way. In the context of the pandemic, transgenerational entrepreneurship can thus potentially provide MFBs competitive advantage over NFBs or FGFBS.

Among MFBs, there could be variation in firms' management structure that could also influence their resiliency during the pandemic. Some MFBs involve several generations of family members in various capacities – in leadership or operating roles, as Board members or shareholders. In this paper, we call these as multiple-generation family businesses (MGFBs). These firms include those managed together by the founders (first generation) and their children (second generation), or by the children and the grand children (third generation). Qualitative research show that family firms around the globe succeed across generations when they combine their unique family resources and capabilities with their entrepreneurial orientation (Sieger, Zellweger, Nason, & Clinton, 2011; Zellweger, Nason, & Nordqvist, 2012). Firms managed by at least two generations do not only benefit from transgenerational entrepreneurship and intergenerational transmission of knowledge and experience, they also have more opportunities for active collaboration in strategy formulation. This unique characteristic can potentially place MGFBs at a better position to address the challenges of the pandemic relative to other MFBs, FGFBS or more broadly, single-generation family businesses (SGFBs)¹.

This paper documents the differential impact of the pandemic on family businesses and examines whether the generation of current management influences their resiliency. Specifically, it examines the revenue performance of multigenerational and multiple-generation family firms relative to single generation or first-generation family firms using a unique dataset of family and non-family businesses collected from 75 countries between June and October 2020. Conditional on firm and industry characteristics, the paper also investigates business strategies that

¹SGFBs include FBs managed by second generation only or third generation only, etc.

contributed to the variation in the impact of the pandemic on family firms. In the process, the paper indirectly tests using empirical data whether the competitive advantage of multigenerational family firms owing to transgenerational entrepreneurship is evident as firms try to stay afloat during the pandemic.

Results indicate that there is no appreciable difference in the revenue performance between family and non-family businesses during the pandemic. We also find no significant difference in the revenue performance of multigenerational and first-generation family businesses. That is, the supposed competitive advantage of multigenerational family businesses does not appear to be reflected in their resiliency during the pandemic. However, we find that multiple-generation family businesses are more likely to either maintain or increase their revenues compared to single-generation or first-generation family firms. That is, family firms managed by at least two generations of family members are less likely to suffer a revenue decline during the pandemic. Our estimates control for firm-specific, industry-specific, and country-specific variables, including government support to businesses and the level of Covid restrictions in the headquarter country of the firms. We compare the strategies implemented by the different types of family businesses to gain some insights on what contributed to this difference in revenue performance. We find that multiple-generation family businesses are less likely to rely on strategies such as laying off workers, but instead are more likely to reduce employee hours to cope with the challenges of the pandemic. They are also less likely to delay or defer payment of financial obligations, ensuring their ability to maintain good relationships with suppliers and partners. We also find that there is more room for collaboration and coordination among multiple-generation family businesses. Specifically, they are more likely to note that family members are highly skilled and collaborate with each other to respond to the challenges imposed by the pandemic and to be creative in facing the new normal. These results suggest that relative to SGFBs, including FGFBs, MGFBs take advantage of the talents and value offerings of the different generations not only to stay afloat, but also even post revenue growth during the pandemic. We can surmise that the experience and wisdom of the older generations may have been complemented by the technological proficiency and creativity of the younger generation, thus helping their family business survive the pandemic. That is, while resilience is in the DNA of family businesses, inter-generational collaboration appears to make MGFBs more resilient in times of crisis.

The rest of the paper is organized as follows: Section 2 presents the data used; Section

3 discusses the empirical approach; Section 4 presents the results; Section 5 outlines the study limitations and directions for future research; and Section 6 concludes.

2 Data

We utilize a unique dataset of family and non-family firms collected from 75 countries during the height of the pandemic in 2020. The survey data was gathered through the initiative of the STEP Project Global Consortium and KPMG Private Enterprise. Collected between June 2020 and October 2020, the data cover five macro regions - Europe, North America, South America and the Caribbean, Asia Pacific, and the Middle East and Africa. The main goal of the survey is to capture the experiences and insights of family businesses from various industries around the globe in the middle of the pandemic.

Figure 1 illustrates the breakdown of the different firm groups. The universe of businesses can be divided into FBs and NFBs. In terms of management structure, FBs could be either managed by multiple generations (MGFBs) or only one generation (SGFBs). These SGFBs can then be managed by their founders or the first generation (FGFBs), or have already been passed on by the founders to their children or grandchildren, the group we call “Gen 2 and beyond SGFBs” in the figure. Our definition of multigenerational family businesses can then be divided into two groups based on management structure: those managed by multiple generations or those managed by generation 2 and beyond.

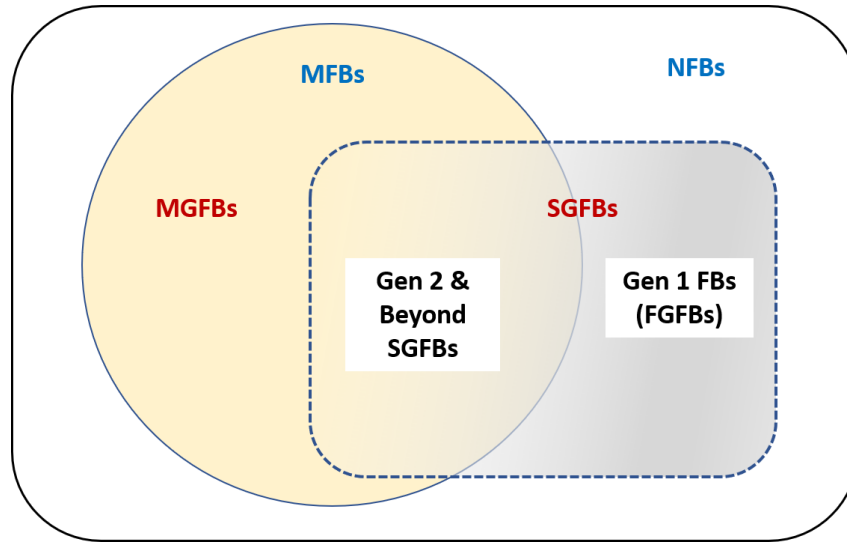


Figure 1: Firm Types

Table 1 shows some descriptive statistics for the analysis sample used in this paper. Comprised of 176 non-family and 1,371 family businesses, our sample does not seem to show any appreciable difference in the revenue performance of these two groups during the pandemic.² About two-thirds of of FBs and NFBs suffer a decline in revenue while about two-fifths reduce the size of their workforce during the pandemic. It is worth noting though that prior to the pandemic, NFBs are in a much better financial position compared to FBs, as they have cash-on-hand that is enough to cover about 133 months of payroll and company expenses while FBs have only 8 months worth.

Meanwhile, in our family business sample, 888 or 65 percent are multigenerational businesses, of which 223 or 16 percent are multiple-generation firms. Moreover, 1,148 observations are single-generation businesses, the bulk of which are first generation (42 percent), followed by second generation (35 percent), and third generation (15 percent). Very old family businesses (fourth or fifth generations) are only less than 9 percent of the sample. Meanwhile, the majority of multiple-generation family firms are managed by first and second generations (65 percent) or second and third generation (24 percent). Similar with the single-generation group, the combined share of old family businesses (generations 3 and 4 or generations 4 and 5) is only about 7 percent of the sample. The remaining 2 percent of the multigenerational family businesses are mainly comprised of a three-generation businesses as listed in Table 1.

²Observations with missing information for certain key variables are dropped from the sample.

Table 1: Summary Statistics

	(1)	(2)	(3)	(4)	(5)	(6)
	All	FB	NFB	MFBs	MGFBs	SGFBs
Revenue Decline	0.659	0.657	0.676	0.640	0.619	0.665
Staff Decline	0.431	0.433	0.420	0.432	0.466	0.426
Pre-Covid cash-on-hand	22.11	7.917	132.7	8.384	8.123	7.877
Gen 1 only		0.352		-	-	0.421
Gen 2 only		0.292		0.450	-	0.348
Gen 3 only		0.123		0.190	-	0.147
Gen 4 only		0.042		0.064	-	0.050
Gen 5 only		0.028		0.044	-	0.034
Gen 1 & 2		0.108		0.167	0.664	-
Gen 1 & 3		0.0007		0.001	0.004	-
Gen 2 & 3		0.039		0.060	0.238	-
Gen 3 & 4		0.010		0.016	0.063	-
Gen 4 & 5		0.002		0.003	0.0135	-
Gen 1, 2, & 3		0.002		0.003	0.013	-
Gen 2, 3, & 4		0.0007		0.001	0.004	-
Micro	0.367	0.352	0.483	0.235	0.327	0.356
Small	0.182	0.178	0.210	0.178	0.179	0.178
Medium	0.215	0.228	0.119	0.276	0.251	0.223
Large	0.237	0.243	0.188	0.311	0.242	0.243
North America	0.052	0.050	0.062	0.050	0.036	0.053
South America	0.165	0.160	0.199	0.133	0.130	0.166
Europe	0.511	0.534	0.335	0.615	0.399	0.560
Asia-Pacific	0.081	0.074	0.142	0.077	0.139	0.061
Middle East & Africa	0.191	0.182	0.261	0.126	0.296	0.159
Family Ownership		98.72	-	92.43	93.51	99.73
Subsidy	0.760	0.761	0.744	0.777	0.785	0.757
Stringency	63.14	63.01	64.16	61.70	64.77	62.66
Observations	1547	1371	176	888	223	1148

The different types of family businesses are quite similar in terms of ownership, business size distribution, and receipt of government support or subsidy. More than 90 percent of the entire family business are owned by family members. For single-generation firms, family ownership is a little more concentrated at almost 100 percent. In terms of business sizes, about a third of family firms are micro enterprises (those with 20 or less employees), about 40 percent are small enterprises (21-50 employees) to mid-size enterprises (51-200 employees), while the remaining quarter are large enterprises (more than 200 employees). Meanwhile, more than three-quarters of family businesses receive some form of financial support from the government. These government programs include loans, tariff reduction, tax deferment or reduction, and sub-

sidies to introduce remote work or to switch production as well as for employees to supplement their salary loss. In terms of geographic distribution, the bulk of the family business sample is from Europe (53 percent), followed by Middle East & Africa (18 percent), South America (16 percent), while the Americas and Asia-Pacific together account for about 28 percent of the sample.

We augment our STEP dataset with a measure of governments’ policy restrictions that limit the operations of the firms for each country. For this, we use the Oxford University’s Covid-19 Government Response Tracker (Hale et al., 2021) which tracks different policy responses of more than 180 countries, including school closures, travel restrictions, vaccination policy. These policies are recorded on a scale to reflect the extent of government action, and scores range from 1 to 100, with 100 being the most stringent. As can be noted in Table 1 the stringency scores for the different types of family businesses are quite close.

3 Estimation

Given the cross-section nature of the STEP-Covid19 dataset, we estimate a simple model as follows:

$$y_{ijk} = \beta_0 + \beta_1 \text{Treat}_i + \delta_j + \theta_k + \mathbf{X}\boldsymbol{\Gamma} + \varepsilon_{ijk}. \quad (1)$$

Our dependent variable y_{ijk} represents the revenue performance of firm i in industry j in region k , and is equal to 1 if a firm posts a stable or higher revenue, and 0 if lower revenue during the pandemic compared to the pre-pandemic period. The variable Treat_i is a dummy variable equal to 1 if firm i is in the treatment group and 0 in the comparison group. In this paper, a firm is treated if it is a multigenerational or multiple-generation family business. The comparison group is comprised of first-generation or single generation firms. While the pandemic has widespread impact, the nature and the magnitude of the impact may be industry specific. For instance, transportation and accommodation/hospitality industries may have been affected differently because they are directly affected by government-imposed lockdowns, compared to industries providing goods and services which are considered necessities, such as the supermarket segment of the retail industry.³ We control for this heterogeneity by including δ_j , which represents fixed

³The major industries covered in the survey include Manufacturing, Service Activities, Wholesale and Retail Trade, Construction, Accommodation and Food Service, Agriculture, Information and Communication, Trans-

effects for firms’ industry classification. This ensures that we are comparing the different types of family firms within the same industry. Although Covid-19 is a global pandemic, it did not affect regions at the same rate at the same time. Countries within a region are not only likely to have experienced the pandemic at comparable intensities, they are also likely to be more interconnected and comparable in terms of business operations and policy environments. We account for this heterogeneity by including fixed effects for the region of a firm’s headquarter, θ_k . This ensures that we are comparing family businesses within the same region.

Meanwhile, \mathbf{X} is a vector of control variables, which includes the pre-pandemic financial status of the firm, the fraction of shares owned by the family, fixed effects for the size of the firm, dummy for receipt of any government support or subsidy, and the stringency of the government’s pandemic response in a firm’s headquarter country. The inclusion of the cash position of the firm prior to the pandemic ensures that we are comparing firms with similar financial positions as they navigate the challenges of the pandemic. Firms which have a stronger financial position prior to the pandemic may be expected to have the necessary resources to implement strategies that will help them stay afloat. We also control for share ownership of the firm following Calabro and McGinness (2021) who note that high concentration of shares between a small number of family members typically leads to greater family involvement and influence on decisions whereas wide dispersion of shares leads to less involvement in the company’s operations. While a business size does not necessarily predict if a business will thrive (Liberti, 2020), there could be factors, observed and unobserved, that influence the adaptability of large firms vs smaller firms. For instance, Andersson, Johansson, Karlsson, Lodefalk, and Poldahl (2018) examine Swedish data and find that family firms, although tend to be more profitable, have fewer total assets, employment, and sales, and carry higher solidity (a measure of financial composition and risk preference), and that these differences diminish with firm size. To account for this heterogeneity, we also control for firm size (micro, small, medium, and large) in our regression model. Meanwhile, to capture the impact of the policy environment where a firm is operating in, we include controls for whether or not a firm received some form of subsidy from its government as well as the level of movement restrictions imposed during the pandemic. Finally, ε_{ijk} represents the error term in our model. We use logistic regression to obtain consistent estimates given the

portation and Storage, Financial activities, Real estate, Water supply and waste management, Administrative support, and Arts and Entertainment.

binary nature of our dependent variable. We cluster the standard errors at the region level as the unobservables are likely to be correlated across countries within a region. For instance, firms are more likely to look at the experience of their peers in neighboring countries in their response to the challenges of the pandemic.

The estimated coefficients from a logistic regression model are in the log-odds scale, which do not have any useful interpretation other than the sign. For instance, a positive sign for the coefficient of interest β_1 implies that multigenerational or multiple-generation family businesses are more likely to post better revenue performance than single-generation family businesses, after controlling for firm, industry, and region characteristics as well as country-specific policies. However, we are particularly interested in the likelihood that multigenerational or multiple-generation family businesses maintain or increase their revenue during the pandemic and whether this likelihood is significantly different from that of single-generation or first generation family firms. For this, we also show the average marginal effects (AME) from the logistic regression estimates.

4 Results

We begin by presenting the results from the logistic regression estimation of equation (1), where we compare the revenue performance of the treated and comparison groups. We, then, investigate the potential mechanisms for this variation in revenue performance by examining significant differences in the actions and strategies pursued by family firms during the pandemic. Finally, we document whether family businesses perform differently compared to non-family businesses, which appear to be in a much better financial position at the start of the pandemic.

4.1 Main Results

We start by comparing multigenerational firms with first-generation firms to investigate whether the former have a competitive advantage in dealing with the pandemic by way of transgenerational entrepreneurship (Table 2). We first estimate a base model with industry fixed effects, region fixed effects, and pre-pandemic financial status of the firms as control variables (column 1 of Table 2). The estimated coefficient of the Treat variable (first row) indicates that there is no statistically significant difference in the predicted revenue performance of multigenerational

and first-generation family businesses during the pandemic. The AME (second row) indicates that during the pandemic, the likelihood that multigenerational family businesses maintain or raise revenue is higher by 2.9 percent compared to that of single-generation family businesses, controlling for firms' pre-pandemic cash position, industry classification, and the region of firms' headquarter. However, this estimate is not statistically significant. We then augment the base model with other firm characteristics such as firm size and extent of family ownership of the firm (column 2), by an indicator of whether or not a firm received some form of government support or subsidy (column 3), and by the level of Covid policy restriction in a firm's headquarter country (column 4). Despite controlling for more potentially confounding factors, we find no significant difference in the revenue performance of multigenerational firms relative to first generation firms.

Table 2: Effect on Revenue - MFBs vs FGFBs

	(1)	(2)	(3)	(4)
Treat	0.138 (0.145)	0.0847 (0.157)	0.111 (0.151)	0.122 (0.155)
Treat AME	0.029 (0.030)	0.017 (0.033)	0.023 (0.031)	0.025 (0.032)
Obs	1371	1371	1371	1371
<i>Controls</i>				
Pre-pandemic cash-on-hand	Yes	Yes	Yes	Yes
Industry fixed effects	Yes	Yes	Yes	Yes
Region fixed effects	Yes	Yes	Yes	Yes
Other firm characteristics	No	Yes	Yes	Yes
Subsidy	No	No	Yes	Yes
Policy Stringency	No	No	No	Yes

Notes: The standard errors shown in parentheses are clustered at the region level: * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$. Firm characteristics include firm size and family ownership of the firm. Regions include Europe, North America, South America and the Caribbean, Asia Pacific, and the Middle East and Africa. The estimated coefficients for the other variables are not shown for space considerations.

Next, we look at family businesses which are managed by several generations of family members. Table 3 shows the results when we compare multiple-generation firms with single-generation firms. It may be noted that except for first-generation firms, single-generation firms can also take advantage of inter-generational transfer of entrepreneurial mindsets. However, their potential for inter-generational collaboration may be limited relative to multiple-generation firms. The estimates for the base model shown in column 1 indicate that there is a statis-

tically significant difference in the predicted revenue performance of multiple-generation and single-generation family businesses during the pandemic. The AME indicates that during the pandemic, the likelihood that multiple-generation family businesses maintain or raise revenue is higher by 4.5 percent compared to single-generation family businesses, controlling for firms' pre-pandemic cash-on-hand, industry classification, and the region of firms' headquarter.

Table 3: Effect on Revenue - MGFs vs SGFBs

	(1)	(2)	(3)	(4)
Treat	0.393*** (0.138)	0.391*** (0.129)	0.407*** (0.134)	0.429*** (0.140)
Treat AME	0.045*** (0.016)	0.081** (0.034)	0.082** (0.029)	0.086*** (0.030)
Pre-pandemic cash-on-hand	0.00195 (0.00395)	0.00153 (0.00347)	0.00127 (0.00326)	0.00100 (0.00342)
Subsidy			-0.579*** (0.223)	-0.569** (0.224)
Stringency				-0.0175** (0.00814)
Obs	1371	1371	1371	1371
<i>Controls</i>				
Pre-pandemic cash-on-hand	Yes	Yes	Yes	Yes
Industry fixed effects	Yes	Yes	Yes	Yes
Region fixed effects	Yes	Yes	Yes	Yes
Other firm characteristics	No	Yes	Yes	Yes
Subsidy	No	No	Yes	Yes
Policy Stringency	No	No	No	Yes

Notes: The standard errors shown in parentheses are clustered at the region level: * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$. Firm characteristics include firm size and family ownership of the firm. Regions include Europe, North America, South America and the Caribbean, Asia Pacific, and the Middle East and Africa. The estimated coefficients for the other variables are not shown for space considerations.

In our second specification (column 2), we add fraction of shares owned by the family and fixed effects for the firm size. Our estimates remain statistically significant but the estimated AME now increases to 8.1 percent. When we add a dummy for whether or not a firm received any form of government support (column 3), our estimated marginal effect remains statistically significant and is broadly unchanged. Finally, we take into account the impact of the level of stringency of government restrictions during the pandemic (column 4). This is important as it captures the policy environment that all firms have to deal with while trying to stay afloat during the pandemic. We thus consider model 4 as our preferred specification. Our estimates

remain significant and the difference in the conditional probability of maintaining or increasing revenue between multigenerational and single generation businesses is now slightly higher at 8.6 percent.

Let us focus on the impact of the policy environment on firms' performance. Our estimated coefficient for the receipt of subsidy turns out to be negative, implying that those who received some form of government support are more likely to experience a decline in revenue. This particular coefficient should be interpreted with caution, however, as it likely captures other factors such as the severity of the pandemic in a particular country. Meanwhile, we find that the stringency of policy restrictions is negatively correlated with the likelihood of maintaining or increasing revenue. This, of course, represents in part a short-term effect of policy restrictions on firms' revenue performance. It is also interesting to note that the estimated coefficient of the pre-pandemic financial position of the firm is positive although it is not statistically significant. Direction-wise, the positive coefficient implies that firms which have larger cash-on-hand prior to the pandemic are more likely to not suffer a revenue decline.

The group of single-generation family firms can be divided into two sub-groups. The first sub-group is managed by its founders and thus, the youngest in the sample. These are previously referred to as first-generation family firms. The second sub-group is comprised of older single-generation family firm, i.e., those managed by Generation 2 only or Generation 3 only. The first sub-group is arguably a better comparison group because by definition, they cannot take advantage of transgenerational entrepreneurship. They also have the least experience in the industry compared to multiple-generation or multigenerational firms. Our estimates for our comparison of multiple-generation and first-generation firms are shown in Panel A of Table 4. Results are broadly consistent with those shown in Table 3, indicating that multiple-generation firms are more likely to show better revenue performance than first-generation firms. However, our estimated marginal effect for our preferred specification falls from 8.6 percent to 6.4 percent. This seems to suggest that first-generation family firms appear to be at a better position to deal with the pandemic relative to older single-generation firms. To confirm this hypothesis, we re-estimate our models but now using the second sub-group as the comparison group. Similar with Panel A, the estimates are all statistically significant, indicating that multiple-generation family firms are more likely to perform better than multigenerational firms managed only by a single generation. Specifically, they are about 8.3 percent (column 4) more likely to either maintain or

increase revenue, which is very similar with the estimate shown in Table 3.

Table 4: Effect on Revenue - MGFs vs Comparison Groups

	(1)	(2)	(3)	(4)
<i>Panel A</i>				
<i>Comparison Group - First generation family firms</i>				
Treat	0.408** (0.190)	0.295** (0.145)	0.320** (0.136)	0.328** (0.151)
Treat AME	0.081** (0.039)	0.580** (0.029)	0.062** (0.028)	0.064** (0.031)
Obs	695	695	695	695
<i>Panel B</i>				
<i>Comparison Group - Generation 2 and beyond single-generation family firms</i>				
Treat	0.357*** (0.106)	0.375*** (0.0868)	0.367*** (0.0950)	0.404*** (0.103)
Treat AME	0.075** (0.022)	0.079** (0.018)	0.076** (0.020)	0.083** (0.021)
Obs	888	888	888	888
<i>Controls</i>				
Pre-pandemic position	Yes	Yes	Yes	Yes
Industry fixed effects	Yes	Yes	Yes	Yes
Region fixed effects	Yes	Yes	Yes	Yes
Other firm characteristics	No	Yes	Yes	Yes
Subsidy	No	No	Yes	Yes
Policy Stringency	No	No	No	Yes

Notes: The standard errors shown in parentheses are clustered at the region level: * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$. Firm characteristics include firm size and family ownership of the firm. Regions include Europe, North America, South America and the Caribbean, Asia Pacific, and the Middle East and Africa. The estimated coefficients for the other variables are not shown for space considerations.

Amid the general downturn in the revenue performance of family businesses, our estimates indicate that there is considerable heterogeneity in the impact of the pandemic, with multiple-generation family businesses seemingly affected at a lesser magnitude than single-generation family businesses.

4.2 Mechanisms

To investigate the mechanisms through which multiple-generation family businesses are able to outperform single-generation family businesses, we compare the actions and strategies they implemented during the pandemic. Figure 2 shows the fraction of multiple-generation and

single-generation family businesses which chose to implement the different strategies listed on the y-axis. As can be noted from the figure, reductions in either office expenses or marketing spending appear to be the most common response in both groups, although a larger fraction of multiple-generation family businesses implemented those. In terms of employee management, more multiple-generation businesses appear to reduce staff hours or employee pay, but a slightly bigger fraction of single generation businesses opt to furlough or lay off their employees. Interestingly, more single generation family businesses are able to move their employees to remote status. Meanwhile, deferment or outright reduction in executive pays appears to be more popular among multiple-generation family businesses. Thus, when it comes to labor supply costs, it appears that multiple-generation businesses are more inclined to reduce the salary of their management team or employees, rather than let go of some of their staff. In terms of their obligations, more single-generation family businesses appear to have deferred their lease payments or outright terminated their leases early. Despite the fact that their pre-pandemic cash positions are comparable, single generation family businesses appear to be in more financial trouble as more tried to take out more debt or raise capital (equity) to stay afloat.

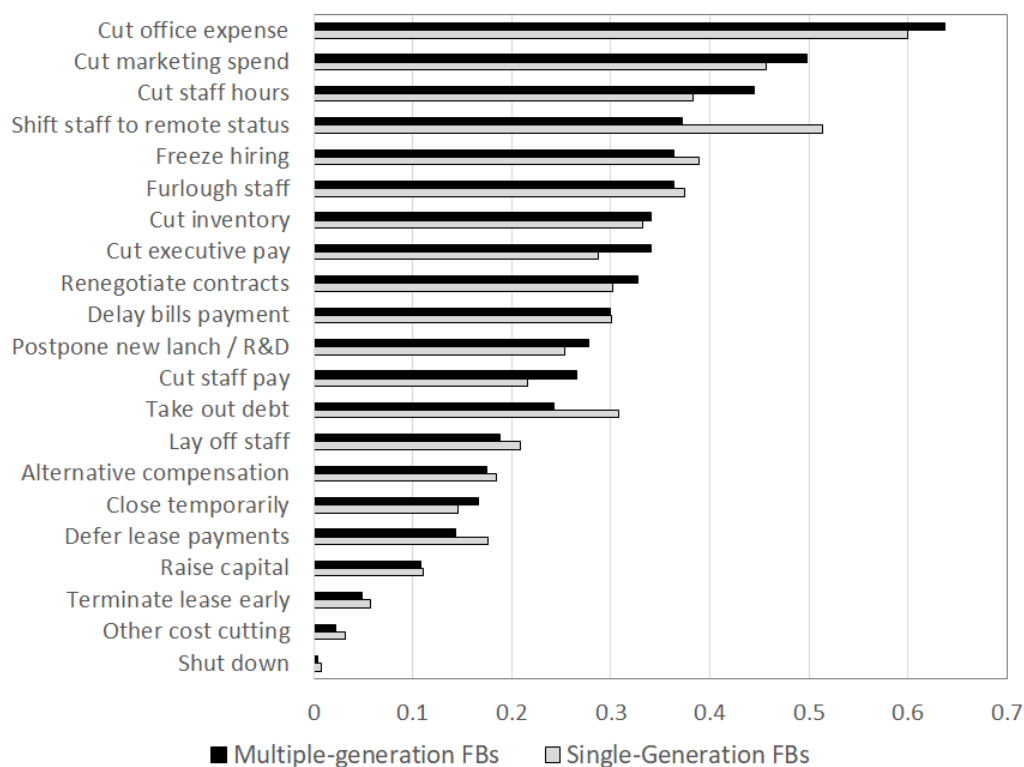


Figure 2: Pandemic Response of Family Businesses

To formally test whether there are differences in the actions and strategies each group of firms implemented during the pandemic, we estimate a variant of equation (1) where we replace the outcome variable *revenue performance* with the pandemic responses of each firm. In particular, the outcome variable is equal to 1 if a particular strategy is implemented by a firm, and 0 otherwise. In this case, we are not simply comparing the fraction of multiple-generation businesses which implemented a specific strategy with that of single generation businesses. Our logistic regression estimates shown in Table 5 are for our preferred specification (specification 4 in Table 2). Each coefficient comes from a separate regression and indicates whether the likelihood that multiple-generation family businesses pursue a specific strategy is significantly different from that of single-generation family businesses, conditional on firms' pre-pandemic financial position and other firm characteristics, industry and region fixed effects, and the governments' policy stringency. As shown in Table 5, multiple-generation family businesses are less likely to lay off their employees, but instead are more likely to reduce employee hours to cope with the challenges of the pandemic. To some extent, this result may be interpreted as representing differences in how firms value their employees at least during crisis times. Compared to single-generation family businesses, they are also less likely to shift employees to remote status. Multiple-generation family businesses appear to better manage their financial obligations as they are less likely to delay or defer payment of their obligations and lease. Again, this may be interpreted to mean that despite the financial challenges, multiple-generation family businesses ensure that they are able to maintain good relationships with their suppliers and partners. With respect to other potential actions and strategies, we find no statistically significant differences between multiple-generation and single-generation family businesses. These include furloughing of employees, hiring freeze, deferment or reduction of executive pay, renegotiation of contracts, reduction in marketing spending or office expenses, and postponement of research and development investments or new product launches.⁴

⁴The estimates for the various actions and strategies are shown in Table 12 (MGFBs vs SGFBs) and Table 13 (MGFBs vs FGFs), which can be found in the Appendix section.

Table 5: Differences in Firm Actions and Strategies

	(1)
Lay off staff	-0.282*** (0.0705)
Cut staff hours	0.343* (0.199)
Shift staff to remote status	-0.432*** (0.0908)
Delay payment of obligations	-0.223*** (0.0763)
Defer lease payment	-0.410*** (0.148)
Obs	1371

Notes: The standard errors shown in parentheses are clustered at the region level: * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$. Each coefficient comes from a separate regression model. Controls include pre-pandemic cash position; extent of family’s ownership of the firm; industry, region, and firm size fixed effects; receipt of government subsidy; and governments’ policy stringency. The estimated coefficients of the other variables and other outcomes are not shown due to space considerations.

We investigate the internal workings of firms’ strategy formulation by looking at their responses on questions related to collaboration, adaptability, and idea development. For this, we again estimate a variant of equation (1) where we have as the dependent variable the degree to which firms agree with a number of statements on how they utilized the skillset of their family members during the pandemic. If the firm agrees or strongly agrees to one statement, the response is coded as one, and zero otherwise. Since the dependent variable has binary outcomes, we again estimate a logistic regression model. Table 6 shows the logistic regression estimates for our preferred specification. Results show that multiple-generation family businesses are more likely than single-generation businesses to note that family members are skilled at collaborating with each other to diagnose and solve the problems created by the pandemic (row 1). They are also more likely to agree that family members are highly skilled to respond to the challenges of Covid-19 (row 2), highlighting the creativity and adaptability of family members to the new normal (row 3). While the estimated differences between multiple-generation and single-generation family business for the other statements are not statistically significant, the sign of the coefficient is noteworthy. We find that multiple-generation family businesses are more likely to develop new ideas and partner with stakeholders to develop solutions.⁵ These results are

⁵The full set of estimates of the differences in family collaboration attributes are shown in Table 14 (MGFBs)

consistent with the findings of Calabro and McGinness (2021), who find that family businesses that have several generations of the family involved in the business were more likely to deploy a business transformation strategy compared to single-generation firms.

Table 6: Differences in Family Collaboration

	(1)
Family members collaborated	0.444*** (0.0829)
Family members skilled to respond to covid	0.301** (0.150)
Family members creative and adapt to new normal	0.257* (0.134)
Family members developed new ideas	0.134 (0.179)
Family members partner with stakeholders to develop solutions	0.169 (0.104)
Family members apply knowledge from one area to another	-0.0508 (0.0749)
Obs	1371

Notes: The standard errors shown in parentheses are clustered at the region level: * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$. Each coefficient comes from a separate regression model. Controls include pre-pandemic cash position; extent of family’s ownership of the firm; industry, region, and firm size fixed effects; receipt of government subsidy; and governments’ policy stringency. The estimated coefficients of the other variables and other outcomes are not shown due to space considerations.

4.3 Heterogeneity and Robustness Checks

We first explore potential heterogeneity in our estimates by firm size. As illustrated by Andersson et al. (2018), there is significant variation across firm sizes that could potentially affect their pandemic response. Using Swedish population data, Andersson et al. (2018) shows that differences between family firms and private non-family firms are most pronounced among micro- to small-sized firms and these differences get smaller as firm size increases. Family firms tend to have higher solidity than private non-family firms but only among smaller-sized firms. Finally, they find that most family firms are less likely than private non-family firms to be part of a multinational enterprise or an enterprise group or to export, except for large family firms. We explore this potential heterogeneity by re-estimating our preferred specification from Table 2 for vs SGFBs) and Table 15 (MGFBs vs FGFBs), which can be found in the Appendix section.

each firm size category.⁶ Results shown in Table 7 should be interpreted with caution, however, because the power of our estimates decline significantly for this sub-sample analysis. Estimates indicate a statistically significant difference in revenue performance between multiple-generation and single-generation family businesses only for the large companies. We find that among large firms, the probability that multiple-generation firms post a stable or higher revenue during the pandemic is about 20 percent higher than that of single-generation firms. Although our estimated marginal effects are not significant for the smaller-sized firms, the sign of the coefficients is still worth noting. We find that the positive difference between the two groups of family businesses appears to be true across all firm sizes, with the exception of small companies whose estimated average marginal effect is practically zero.

Table 7: Heterogeneity by Firm Size

	(1)	(2)	(3)	(4)
	Micro	Small	Medium	Large
Treat	0.198 (0.358)	-0.0313 (0.419)	0.259 (0.211)	0.977*** (0.276)
Treat AME	0.038 (0.069)	-0.0005 (0.073)	0.047 (0.040)	0.200*** (0.053)
Obs	737	374	447	508

Notes: The standard errors shown in parentheses are clustered at the region level: * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$. Each coefficient comes from a separate regression model. Controls include pre-pandemic cash position; extent of family’s ownership of the firm; industry, region, and firm size fixed effects; receipt of government subsidy; and governments’ policy stringency. The estimated coefficients of the other variables and other outcomes are not shown due to space considerations.

Moreover, we examine how our estimates would be affected if the firm’s chief executive officer (CEO) is a family member or not. According to Calabro and McGinness (2021), one important factor that influences the strategies and specific actions that individual family businesses implement is whether or not the firm is led by a family member. In particular, the family overall is generally more engaged in decision-making and in the development of long-term strategies if the CEO is a family member. For context, we again show in column 1 of Table 8 the main results from the full-sample estimate from our preferred specification in Table 3. As previously noted, we find that the likelihood that firms maintain or increase their revenue during the pandemic is higher for multiple-generation family businesses than single-generation family

⁶The set of controls is the same except we did not include firm size fixed effects in these estimates.

businesses by about 8.6 percent. When we augment our preferred specification with a dummy variable for whether or not the CEO is a family member (column 2), the sample size shrinks by about half because this information is missing for a substantial portion of the sample. Nonetheless, we find that our estimated marginal effect remains statistically significant and is higher at 13.4 percent. We also explore how our marginal effect estimates change when we restrict the sample to family businesses whose CEO is a family member (column 3) or not (column 4). Our estimated marginal effect in both sub-samples are statistically significant and consistent with the main results in terms of the sign of the coefficients. The estimated marginal effect for the sub-sample of family businesses headed by a CEO-family member (column 3) is very similar with the results for our CEO-dummy augmented main specification (column 2). When we restrict the sample to CEOs who are not family members, our estimated marginal effect rises substantially to almost 24 percent, although this should again be interpreted with caution because of sample size concerns.

Table 8: Role of a Family Member CEO

	(1)	(2)	(3)	(4)
Treat	0.429*** (0.140)	0.687*** (0.057)	0.745*** (0.136)	1.300** (0.540)
Treat AME	0.086*** (0.030)	0.134*** (0.013)	0.139*** (0.021)	0.236** (0.078)
Obs	1371	651	493	151

Notes: The standard errors shown in parentheses are clustered at the region level: * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$. Each coefficient comes from a separate regression model. Controls include pre-pandemic cash position; extent of family’s ownership of the firm; industry, region, and firm size fixed effects; receipt of government subsidy; and governments’ policy stringency. The estimated coefficients of the other variables and other outcomes are not shown due to space considerations.

In addition to the various specification checks shown in the main results (Table 2), we re-estimate our preferred specification using the probit model and linear probability model (LPM) in order to assess the robustness of our findings. It may be recalled that the difference between logit and probit models is the assumption on the underlying distribution of the error term. The former assumes logistic distribution while the latter assumes normal distribution. Both have the advantage of generating outcome probabilities that lie between zero and one. Meanwhile, linear probability models do not have the same characteristics as the predicted probability that binary outcome variable is equal to one can be outside the zero-one range.

However, the estimated coefficient from the LPM is easier to interpret as it already represents that estimated difference between multiple-generation and single-generation family businesses in the conditional probability that they will either maintain or increase revenue during the pandemic. In the case of logit and probit models, this marginal effect has to be estimated separately. Table 9 shows the estimated coefficients of the multiple-generation dummy variable and the average marginal effects for the preferred specification (specification 4 in Table 2). As can be noted from the second row of the table, the estimated marginal effects are fairly similar and are all statistically significant across the three models. This implies that the main results from the logit model are robust.

Table 9: Estimation Models

	(1)	(2)	(3)
	Logit	Probit	LPM
Treat	0.433*** (0.141)	0.264*** (0.086)	
Treat AME	0.087** (0.030)	0.088** (0.030)	0.090*** (0.026)
Obs	1371	1371	1371

Notes: The standard errors shown in parentheses are clustered at the region level: * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

4.4 Family vs Non-Family Businesses

As discussed in the summary statistics, there appears to be no appreciable difference in the revenue performance between family and non-family businesses during the pandemic. To verify this, we re-estimate equation (1) but we redefine the *Treat* variable to be equal to one if a firm is a family business and zero if non-family business. Thus, the coefficient of interest β_1 represents the conditional difference in the predicted probability of at least maintaining revenue between family and non-family businesses. Our estimates shown in Table 10 confirm our initial assessment that there is indeed no significant difference in the revenue performance of family and non-family firms during the pandemic. Moreover, we find that the sign and significance of the policy variables and pre-pandemic cash position are consistent with the previous results where we compare multiple-generation with either single-generation or first generation family firms.

Table 10: Effect on Revenue - FBs vs NFBs

	(1)	(2)	(3)	(4)
Treat	0.120 (0.248)	0.125 (0.249)	0.131 (0.257)	0.150 (0.253)
Pre-Covid cash-on-hand	0.00149*** (0.000484)	0.00150*** (0.000474)	0.00154*** (0.000469)	0.00156*** (0.000478)
Subsidy			-0.532** (0.263)	-0.521** (0.264)
Stringency				-0.0139*** (0.00531)
Obs	1547	1547	1547	1547
<i>Controls</i>				
Pre-pandemic cash-on-hand	Yes	Yes	Yes	Yes
Industry fixed effects	Yes	Yes	Yes	Yes
Region fixed effects	Yes	Yes	Yes	Yes
Other firm characteristics	No	Yes	Yes	Yes
Subsidy	No	No	Yes	Yes
Policy Stringency	No	No	No	Yes

Notes: The standard errors shown in parentheses are clustered at the region level: * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$. Firm characteristics include firm size and family ownership of the firm. Regions include Europe, North America, South America and the Caribbean, Asia Pacific, and the Middle East and Africa. The estimated coefficients for the other variables are not shown for space considerations.

In the previous section, we show that multiple-generation family businesses are less likely to post a decline in revenue compared to single-generation family businesses. We take the analysis further and investigate whether this advantage extends to non-family businesses. Table 11 shows the same set of specifications as in Table 3 but we are now comparing multiple-generation family firms with non-family businesses. That is, we re-estimate equation (1) where the *Treat* variable is now equal to 0 for non-family businesses and single-generation businesses are excluded from the sample. Thus, the main coefficient of interest β_1 represents the conditional difference in the predicted probability of at least maintaining revenue between multiple-generation family and non-family businesses. Results shown in the first row of Table 11 indicate that while the gap appears to be positive in favor of multiple-generation family businesses, this is not statistically different from zero. It is also interesting to note that in our specifications, pre-pandemic cash availability is statistically significant. That is, firms with higher cash-on-hand at the start of the pandemic has higher likelihood of at least maintaining their revenue performance. It may be recalled from the summary statistics shown in Table 1 that non-family businesses have cash-

on-hand that could sustain the company’s operations for almost 133 months, on average, while family businesses, both single-generation and multiple-generation family businesses, have only about 8 months. Despite the relatively precarious financial position of multiple-generation family businesses, they are able to exhibit comparable revenue performance relative to non-family businesses. It may also be noted that although the signs of the policy variables *Subsidy* and *Stringency* are consistent with the previous results, they are no longer statistically significant.

Table 11: Effect on Revenue - MGFBs vs NFBs

	(1)	(2)	(3)	(4)
Treat	0.473 (0.352)	0.499 (0.355)	0.511 (0.355)	0.522 (0.402)
Pre-Covid cash-on-hand	0.00128* (0.000687)	0.00115* (0.000636)	0.00118* (0.000657)	0.00119* (0.000712)
Subsidy			-0.301 (0.638)	-0.298 (0.644)
Stringency				-0.00378 (0.0181)
Obs	398	398	398	398
<i>Controls</i>				
Pre-pandemic position	Yes	Yes	Yes	Yes
Industry fixed effects	Yes	Yes	Yes	Yes
Region fixed effects	Yes	Yes	Yes	Yes
Other firm characteristics	No	Yes	Yes	Yes
Subsidy	No	No	Yes	Yes
Policy Stringency	No	No	No	Yes

Notes: The standard errors shown in parentheses are clustered at the region level: * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$. Firm characteristics include firm size and family ownership of the firm. Regions include Europe, North America, South America and the Caribbean, Asia Pacific, and the Middle East and Africa. The estimated coefficients of the other variables are not shown for space considerations.

5 Limitations of the Study and Direction for Future Research

Our paper attempts to show that multiple generations of family members working together in managing a firm might make a difference in a firm’s ability to thrive during the pandemic compared to family firms managed by a single-generation only. Although we endeavor to disentangle the relationship as carefully as we can, the study has limitations that prevent the interpretation of the estimates to be causal. First, our analysis is constrained by the variables included in the family and non-family business global data collected in 2020 by KMPG and the STEP Global

Consortium. Since the data is only cross-section, we are not able to exploit any variation for the same set of firms over time. Rather, we rely on the cross-section variation within an industry classification and region in our identification.

Related to data limitations is our inability to examine all the potential mechanisms that drive the differences in outcomes between the two groups of family businesses. The survey did attempt to collect as much information on the actions and strategies implemented by each firm. However, we lack more detailed information on firms' strategy formulation and financial position before and during the pandemic. We are unable to examine directly the incentives and motivations of firms that could potentially make a difference in their choice of response. We also have a problem with missing information on the composition of the top management and who exactly makes the decisions at least during the pandemic. For one, some firms did not even indicate whether their CEO is a family member or not.

Our paper is also limited by the nature of outcome variables that we can examine. Our ideal scenario would have been to look at the actual monthly sales and profit of firms when they answered the survey compared to the same month in the previous year. A time-series of firms' sales and finances would have enriched the kind of analysis that we can pursue. However, we have to work with the available business performance variable that we have, which is a categorical variable indicating whether a firm posted the same, higher, or lower revenue during the pandemic.

Finally, we recognize that there could be significant unobserved heterogeneity within multiple-generation and single-generation firms. In particular, within the single-generation group, firms managed by second or third generations might be different from first-generation firms in their view of short-term versus long-term business losses and strategies. It is possible that single-generation businesses managed by second or third generations also benefit from the experience of their parents or grandparents. However, it is also possible that their incentives and long-term perspectives might be different than those of the founding generations. The same kind of unobserved heterogeneity in incentives might be present with family businesses managed by multiple generations. For instance, firms managed by first and single generations might have very different experiences and incentives compared to older firms managed by second and third generations or even firms simultaneously managed by three generations.

Future research can address the limitations of this study if a global panel of family and non-family firms with more detailed information on firms' operations becomes available. Such dataset will allow researchers to exploit cross-section and time variation across firms and industries. Future work, both qualitative and quantitative, can also contribute to the literature by analyzing if there are any differences in the incentives and management strategies between and among multigenerational businesses single-generation family businesses.

6 Conclusion

This paper documents the differential impact of the Covid-19 pandemic on family businesses using the STEP-Covid19 dataset, which covers family and non-family firms from 75 countries in the second half of 2020. It also investigates whether the generation of current management influences their resiliency. In particular, it examines the revenue performance of multigenerational and multiple-generation family firms relative to single generation or first-generation family firms. Qualitative research has shown that family firms around the globe succeed across generations when they combine their unique family resources and capabilities with their entrepreneurial orientation (Sieger et al., 2011; Zellweger et al., 2012), an idea captured by *transgenerational entrepreneurship*. Thus, the paper indirectly tests whether the competitive advantage of multigenerational family firms owing to transgenerational entrepreneurship is evident during the pandemic.

Our results indicate that there is no appreciable difference in the revenue performance between multigenerational and first-generation family businesses. To some extent, this could be interpreted to mean that the supposed competitive advantage of multigenerational family businesses owing to transgenerational entrepreneurship is not reflected in their revenue performance during the pandemic.

We further investigate the heterogeneity in family firms by focusing on multiple-generation family businesses. Firms managed by at least two generations are unique because they do not only benefit from transgenerational entrepreneurship and inter-generational transmission of knowledge and experience, they also have more opportunities for active collaboration in strategy formulation. This unique characteristic can potentially place MGFs at a better position to address the challenges of the pandemic relative to other family businesses. Our results

support our hypothesis. We find that multiple-generation family businesses are less likely to post revenue declines compared to single-generation or first-generation family firms. Our estimates control for firm-specific, industry-specific, and country-specific variables, including government support to businesses and the level of Covid restrictions in the headquarter country of the firms.

Conditional on firm and industry characteristics, the paper also investigates business strategies that contributed to the differential impact of the pandemic on the family firms. We find that multiple-generation family businesses are less likely to lay off workers but are more likely to reduce employee hours to cope with the challenges of the pandemic. They are also less likely to delay or defer payment of financial obligations, ensuring their ability to maintain good relationships with suppliers and partners. We also find that there is more room for collaboration and coordination among multiple-generation family businesses. Specifically, they are more likely to note that family members are highly skilled and collaborate with each other to respond to the challenges imposed by the pandemic and to be creative in facing the new normal. We can surmise that the experience and wisdom of the older generations may have been complemented by the technological proficiency and creativity of the younger generation, thus helping their family business survive the pandemic.

We recognize that the cross-section nature of the STEP-Covid-19 dataset limits our ability to examine all the potential mechanisms that drive the differences in outcomes among the different types of family businesses. There could also be potentially significant unobserved heterogeneity among family businesses that we cannot take into account because of data limitations. Nonetheless, the paper provides some interesting insights that can influence further quantitative and qualitative research on the role of management structure in determining the success of family firms. We highlight that multiple-generation family firms are unique in the sense that they perform well relative to other family businesses during the pandemic. They are also able to show comparable performance as non-family businesses, though the latter are in a much better financial position going in to the pandemic. In our view, while resilience is in the DNA of family businesses, inter-generational collaboration appears to make them more resilient in times of crisis.

Appendix

Table 12: Differences in Firm Actions and Strategies: MGFBs vs SGFBs

	(1)	(2)	(3)	(4)
Cut staff hours	0.351** (0.178)	0.352* (0.183)	0.337 (0.210)	0.343* (0.199)
Cut staff pay	-0.113 (0.0781)	-0.109 (0.0881)	-0.127 (0.102)	-0.163 (0.136)
Lay off staff	-0.241*** (0.0760)	-0.266*** (0.0728)	-0.289*** (0.0642)	-0.282*** (0.0705)
Furlough staff	0.0714 (0.134)	0.0613 (0.148)	0.0551 (0.149)	0.0540 (0.158)
Shift staff to remote status	-0.335*** (0.120)	-0.427*** (0.0823)	-0.427*** (0.0833)	-0.432*** (0.0908)
Freeze hiring	-0.0902 (0.0997)	-0.105 (0.102)	-0.120 (0.117)	-0.108 (0.107)
Alternative compensation	-0.0629 (0.180)	-0.0964 (0.219)	-0.0966 (0.232)	-0.102 (0.221)
Cut exec pay	0.112 (0.188)	0.119 (0.180)	0.0967 (0.170)	0.107 (0.163)
Close temporarily	0.135 (0.147)	0.153 (0.133)	0.136 (0.135)	0.146 (0.143)
Shut down	-0.784 (0.807)	-0.579 (0.888)	-0.593 (0.790)	-0.594 (0.808)
Renegotiate contracts	-0.0601 (0.265)	-0.0987 (0.259)	-0.120 (0.249)	-0.114 (0.268)
Delay payment of obligations	-0.146 (0.151)	-0.177 (0.123)	-0.217** (0.0842)	-0.223*** (0.0763)
Cut marketing spend	0.0632 (0.170)	0.0670 (0.169)	0.0609 (0.169)	0.0558 (0.167)
Cut office expense	-0.0229 (0.0821)	-0.0445 (0.0819)	-0.0508 (0.0851)	-0.0686 (0.102)
Defer lease payment	-0.348** (0.139)	-0.394*** (0.137)	-0.418** (0.167)	-0.410*** (0.148)
End lease early	-0.124 (0.401)	-0.135 (0.393)	-0.137 (0.389)	-0.144 (0.396)
Cut inventory	-0.0659 (0.136)	-0.0913 (0.123)	-0.111 (0.131)	-0.0799 (0.134)
Postpone R&D	0.143 (0.317)	0.145 (0.326)	0.134 (0.324)	0.137 (0.324)
Raise capital	0.0804 (0.194)	0.0724 (0.200)	0.0650 (0.233)	0.0593 (0.224)
Take out debt	-0.186 (0.190)	-0.225 (0.190)	-0.239 (0.186)	-0.245 (0.177)
Other cost cutting	-0.115 (0.624)	-0.110 (0.657)	-0.108 (0.663)	-0.0140 (0.590)
Obs	1371	1371	1371	1371
<i>Controls</i>				
Pre-pandemic cash-on-hand	Yes	Yes	Yes	Yes
Industry fixed effects	Yes	Yes	Yes	Yes
Region fixed effects	Yes	Yes	Yes	Yes
Other firm characteristics	No	Yes	Yes	Yes
Subsidy	No	No	Yes	Yes
Policy Stringency	No	No	No	Yes

Notes: The standard errors shown in parentheses are clustered at the region level: * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$. Firm characteristics include firm size and family ownership of the firm. Regions include Europe, North America, South America and the Caribbean, Asia Pacific, and the Middle East and Africa. The estimated coefficients for the other variables are not shown for space considerations.

Table 13: Differences in Firm Actions and Strategies: MGFBs vs FGFBs

	(1)	(2)	(3)	(4)
Cut staff hours	0.468*** (0.147)	0.457*** (0.160)	0.441** (0.183)	0.464** (0.186)
Cut staff pay	0.0124 (0.111)	0.132 (0.135)	0.125 (0.163)	0.109 (0.157)
Lay off staff	-0.129 (0.236)	-0.226 (0.255)	-0.267 (0.205)	-0.262 (0.203)
Furlough staff	0.0495 (0.227)	-0.0696 (0.235)	-0.0699 (0.215)	-0.0769 (0.219)
Shift staff to remote status	-0.0212 (0.105)	-0.318*** (0.115)	-0.321*** (0.118)	-0.336*** (0.141)
Freeze hiring	-0.0228 (0.183)	-0.0236 (0.194)	-0.0448 (0.191)	-0.0133 (0.174)
Alternative compensation	0.185 (0.214)	0.182 (0.266)	0.180 (0.272)	0.182 (0.265)
Cut exec pay	0.0394 (0.174)	0.117 (0.176)	0.0839 (0.163)	0.105 (0.172)
Close temporarily	0.0119 (0.231)	0.0698 (0.245)	0.0526 (0.219)	0.0644 (0.222)
Shut down	0.144 (1.467)	1.173* (0.684)	1.616* (0.853)	1.673 (1.138)
Renegotiate contracts	0.192 (0.243)	0.140 (0.235)	0.103 (0.220)	0.108 (0.228)
Delay payment of obligations	-0.202 (0.230)	-0.320 (0.202)	-0.363** (0.169)	-0.358** (0.168)
Cut marketing spend	0.0000492 (0.188)	-0.0176 (0.177)	-0.0258 (0.166)	-0.0310 (0.164)
Cut office expense	0.0335 (0.180)	-0.00111 (0.194)	-0.00791 (0.185)	-0.00913 (0.197)
Defer lease payment	-0.238* (0.134)	-0.258** (0.121)	-0.288** (0.134)	-0.276** (0.125)
End lease early	-0.185 (0.403)	-0.216 (0.378)	-0.216 (0.365)	-0.217 (0.371)
Cut inventory	0.00253 (0.190)	-0.0387 (0.181)	-0.0622 (0.175)	-0.0360 (0.169)
Postpone R&D	-0.0889 (0.296)	-0.0865 (0.362)	-0.0977 (0.348)	-0.0951 (0.349)
Raise capital	-0.260 (0.172)	-0.241 (0.245)	-0.232 (0.260)	-0.242 (0.245)
Take out debt	-0.0870 (0.234)	-0.242 (0.234)	-0.247 (0.228)	-0.235 (0.222)
Other cost cutting	-0.386 (0.374)	-0.361 (0.476)	-0.352 (0.470)	-0.315 (0.467)
Obs	695	695	695	695
<i>Controls</i>				
Pre-pandemic cash-on-hand	Yes	Yes	Yes	Yes
Industry fixed effects	Yes	Yes	Yes	Yes
Region fixed effects	Yes	Yes	Yes	Yes
Other firm characteristics	No	Yes	Yes	Yes
Subsidy	No	No	Yes	Yes
Policy Stringency	No	No	No	Yes

Notes: The standard errors shown in parentheses are clustered at the region level: * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$. Firm characteristics include firm size and family ownership of the firm. Regions include Europe, North America, South America and the Caribbean, Asia Pacific, and the Middle East and Africa. The estimated coefficients for the other variables are not shown for space considerations.

Table 14: Differences in Family Collaboration: MGFBs vs SGFBs

	(1)	(2)	(3)	(4)
Fam members skilled to respond to covid	0.306** (0.149)	0.293** (0.146)	0.301* (0.154)	0.301** (0.150)
Fam members creative and adapt to new normal	0.241* (0.132)	0.240* (0.134)	0.247* (0.127)	0.257* (0.134)
Fam members developed new ideas	0.151 (0.174)	0.134 (0.190)	0.138 (0.182)	0.134 (0.179)
Fam members collaborated	0.417*** (0.0933)	0.424*** (0.0861)	0.429*** (0.0843)	0.444*** (0.0829)
Fam members partners with stakeholders to develop solutions	0.206* (0.114)	0.175 (0.119)	0.175 (0.120)	0.169 (0.104)
Fam members apply knowledge from one area of buss to another	-0.0124 (0.0832)	-0.0345 (0.0894)	-0.0366 (0.0897)	-0.0508 (0.0749)
Obs	1371	1371	1371	1371
<i>Controls</i>				
Pre-pandemic cash-on-hand	Yes	Yes	Yes	Yes
Industry fixed effects	Yes	Yes	Yes	Yes
Region fixed effects	Yes	Yes	Yes	Yes
Other firm characteristics	No	Yes	Yes	Yes
Subsidy	No	No	Yes	Yes
Policy Stringency	No	No	No	Yes

Notes: The standard errors shown in parentheses are clustered at the region level: * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$. Firm characteristics include firm size and family ownership of the firm. Regions include Europe, North America, South America and the Caribbean, Asia Pacific, and the Middle East and Africa. The estimated coefficients for the other variables are not shown for space considerations.

Table 15: Differences in Family Collaboration: MGFBs vs FGFBs

	(1)	(2)	(3)	(4)
Fam members skilled to respond to covid	0.143 (0.136)	-0.00818 (0.181)	-0.00162 (0.190)	-0.00990 (0.182)
Fam members creative and adapt to new normal	-0.0527 (0.140)	-0.143 (0.210)	-0.145 (0.205)	-0.140 (0.216)
Fam members developed new ideas	-0.0188 (0.245)	-0.132 (0.290)	-0.129 (0.273)	-0.134 (0.268)
Fam members collaborated	0.180** (0.0714)	0.181* (0.102)	0.186** (0.0917)	0.197** (0.0988)
Fam members partners with stakeholders to develop solutions	0.0955 (0.110)	-0.0729 (0.114)	-0.0829 (0.114)	-0.0876 (0.104)
Fam members apply knowledge from one area of buss to another	-0.0213 (0.133)	-0.180 (0.157)	-0.192 (0.165)	-0.207 (0.155)
Obs	695	695	695	695
<i>Controls</i>				
Pre-pandemic cash-on-hand	Yes	Yes	Yes	Yes
Industry fixed effects	Yes	Yes	Yes	Yes
Region fixed effects	Yes	Yes	Yes	Yes
Other firm characteristics	No	Yes	Yes	Yes
Subsidy	No	No	Yes	Yes
Policy Stringency	No	No	No	Yes

Notes: The standard errors shown in parentheses are clustered at the region level: * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$. Firm characteristics include firm size and family ownership of the firm. Regions include Europe, North America, South America and the Caribbean, Asia Pacific, and the Middle East and Africa. The estimated coefficients for the other variables are not shown for space considerations.

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