The Family that Builds the Iron Cage Together, Stays Together… or Does It? Performance Penalties for Purging Particularism in Family-Controlled Ventures

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ABSTRACT

Prior research has highlighted that firm formalization generally improves the performance of new ventures through the purging of particularism – or, the bending of rules, standards, and criteria to accommodate personal relationships and motives. However, few empirical studies have considered how the involvement of an entrepreneur's family in their ventures influences these dynamics. We build on this work by integrating the literatures on firm formalization and family business. Specifically, we highlight that whether purging particularism improves the performance of young firms will be contingent on the extent to which the firms maintain clear boundaries between their business and family systems. In contrast with prior work, we theorize that purging particularism within young firms which do not maintain clear boundaries between these systems will result in decreased performance. This argument builds on the view that particularism within family firms is often a means by which family members leverage unique, family-centered assets such as altruism and an intergenerational commitment to the business. Interfering with this process should thus reduce performance. Results from a randomized controlled trial (RCT) of 1,401 new ventures in Peru support our hypotheses. Implications for the formal structure of family-controlled ventures are discussed.

Keywords: Bureaucracy, Entrepreneurship, Family Business, Field Experiments, Firm Formalization, New Ventures, Randomized Controlled Trials (RCT), Universalism vs Particularism

I. INTRODUCTION

New ventures need structure to survive (Burton et al. 2019; Lee 2022; Sine, Misuhashi, and Kirsch 2006). Developing formal structure in new ventures generally builds on a logic of purging "particularism" as a basis for decision-making and replacing it with a logic of "universalism" (Weber 1947). By way of definitions, universalism builds on the principle of "one standard which is applicable to all" and guides decision-making by requiring that criteria are applied consistently, "independent[ly] of one's particular social relationship to a particular person" (Canales 2010: 4); by contrast, particularism allows "standards [to] be more malleable as a function of the relationships involved" (ibid.). Most prior work has argued that developing "universal" criteria – such as formalizing and codifying organizational processes, routines, and role structures (Adler 2012; Adler and Borys 1996; Colombo, Rossi-Lamastra, and Matassini 2016) – should minimize uncertainty and wasted resources in new ventures. Such benefits occur as these formal structures reduce the scope for employees' discretion by aligning their individual behaviors with the organization's goals (Adler 2012; Monteiro and Adler 2022; Shimizu and Hitt 2005; Vlaar, Van den Bosch, and Volberda 2006). These mechanisms should help new ventures overcome their inherent "structural liability of newness" by increasing their efficiency, minimizing internal confusion, and reducing wasted resources (Aldrich and Yang 2012; Sine et al. 2006; Stinchcombe 1965).

Though this research has yielded valuable insights regarding formalization in new ventures, it tends to assume a neat separation between the formal roles which define an entrepreneur's business and the relationships which define their families (Gomez-Mejia et al. 2007; Gomez-Mejia et al. 2011; Israelsen 2023). For instance, much of this work has been conducted in high-tech, "Silicon-Valley-style" ventures in which family involvement is minimal (Baron, Hannan and Burton 1999; Burton et al. 2019; Colombo et al. 2016; Gomez-Mejia et al. 2011; Israelsen 2023). Correspondingly, our theories regarding the benefits of "purging particularism" in new ventures tend to assume the conditions under which such firms operate (Israelsen 2023). These conditions include the "scaling imperative" (Desantola and Gulati 2017), a purely commercial focus (Burton et al. 2019), a short-term orientation coupled with a desire to "exit" the business (Kaplan and Warren 2009), and the need to source talent from an external labor market

(Burton and Beckman 2007; Kim and Burton 2022). In such contexts, "particularism" is usually *value-destroying* because it leads to inefficient rent-seeking which undermines a venture's ability to remain competitive in resource-poor environments. For instance, managers may offer positions to less competent relatives, thereby harming the firm's reputation in the labor market and hampering its ability to hire the talent it needs to scale (DeSantola and Gulati 2017; Trompenaars 1994). In contexts defined by these conditions, then, "purging particularism" through the implementation of universal structures enhances new venture survival by restricting employee discretion and aligning their behaviors with the venture's broader, organizational goals (Adler and Borys 1996; Colombo et al. 2016; Israelsen 2023; Schulze et al. 2001; Sine et al. 2006).

However, family and business affairs are seldom neatly separated in new ventures – rather, the two are often "intermingled" within them (Israelsen 2023; Muske et al. 2009; Yilmazer and Schrank 2010). The first round of funding and talent for new ventures, for example, often comes from their founders' families (Israelsen 2023; Kaplan and Warren 2009). Relatedly, most new ventures more closely resemble "main street" ventures than they do "Silicon Valley" ventures: they tend to prioritize maintaining a stable income and employment opportunities for their families rather over the pursuit of rapid growth. Hence, the founders' family members are often directly involved in the venture as employees, advisors, and resource-providers (Israelsen 2023; Ivanycheva et al. 2023; La Porta, Lopez-de-Silanes and Schleifer 1999; Stevenson, Kuratko and Eutsler 2019). Family involvement of this sort is also seldom a "passing phase" for new ventures: 77% of new ventures in the US entail significant family involvement (Chua, Chrisman and Chang 2004; Israelsen 2023) and 36-47% of businesses on the SandP 500 can be classified as "family firms" (Family Business Alliance 2023; Luo and Chung 2005). These data suggest that, for most entrepreneurs, starting a new venture is a family affair and it remains that way as the firm matures (Aldrich and Cliff 2005; Carney 2005; Davis and Tagiuri 1996; Gomez-Mejia et al. 2011; Israelsen 2023; Stafford et al. 1999).

This intermingling of family and business has important implications for our understanding of the relationship between new venture formalization and the liability of newness (Aldrich and Yang 2012;

Israelsen 2023). Prior work highlights, for instance, that particularism within intermingled firms allows their managers to leverage the "unique strategic resources" that attend family involvement; such resources include higher levels of commitment, lower wage payments, and a more committed base of talent for the firm (Aldrich and Cliff 2005; Israelsen 2023; Stafford et al. 1999). This is because particularism affords managers the discretion to bend rules and make exceptions in ways that align with the family's values, thereby allowing their priorities to influence the firm (Canales 2014; Carney 2005). In contrast with "Silicon-Valley-style" firms, these priorities are often not a form of value-destroying rent-seeking, but rather are aligned with the long-term survival of the business. For example, family members' altruism for each other and their supporters drives them to work beyond the scope of their formal roles to perform important tasks (Schulze et al. 2001; Schulze, Lubatkin and Dino 2003); flexibility in task allocation therefore allows these employees to act on this commitment and add value to the firm. Employees in family firms are also motivated to conserve socioemotional wealth (SEW) (Gomez-Mejia et al. 2011; Israelsen 2023), which minimizes pressures to maximize short-term performance at the expense of long-term sustainability (Carney 2005; Chrisman, Steier and Chua 2006). Finally, family members' deep knowledge about each other's skills and motivations allows them to bend the letter of rules to better fulfill their spirit (Canales 2014). For instance, they may allocate tasks to family members with the willingness and capacity to execute them, regardless of the firm's organization chart. Thus, particularism in family ventures may be *value-creating* in that it affords managers and employees of such ventures to better apply the "unique strategic resources" of their family members to solve organizational issues (Carney 2005; Chrisman et al. 2006).

To shed light on the extent to which "purging particularism" might differentially impact ventures with varying levels of family involvement, we conduct a 3-year RCT which emphasizes the development of formal organizational structures on 1,401 new ventures in Peru. Our results suggest that formalizing new ventures via the "purging of particularism" – the implementation and codification of universal standards and criteria regarding roles, responsibilities, and financial controls – decreases the performance of ventures which lack clear boundaries between their business roles and family relationships; we call

these “intermingled” firms (Haynes et al. 1999; Muske et al. 2009; Yilmazer and Schrank 2010). We find evidence that this effect is driven by increased rigidity in the organization’s formal role structure and a reduced ability to of entrepreneurs to balance their firm’s business objectives with their family’s lifestyle aspirations. Thus, formalization via “purging particularism” may destroy value in ventures with high levels of family involvement. In line with prior work, we find that this training has a positive effect on the performance of ventures which maintain clear boundaries between their business and family systems – what we call “separated” firms (Davis and Tagiuri 1996; Muske et al. 2009; Yilmazer and Schrank 2010). This paper contributes to the literature on organizational structure in new ventures by suggesting that the benefits of “purging particularism” are contingent upon the level of family involvement in the firm. Our results suggest that formalization based on this logic may be value-destroying when the family and business systems are intermingled. These results offer practical implications for entrepreneurs who start business with family members and suggest that a more suitable approach to formalization for them would entail embracing some of the benefits of particularism while minimizing its costs.

II. THEORY AND HYPOTHESES

Formal Structure in New Ventures

Theories of formal structure in organizations have roots in Weber’s conceptions of bureaucracy (Adler 2012; Monteiro and Adler 2022; Sine et al. 2006; Weber 1947). Weber argued that bureaucracy made organizations more efficient by “rationalizing” them and purging them of “particularism” – the tendency for “social commitments generated through a personal relationship [to] overpower norms of fairness or 'objective' evaluations in work decisions” (Canales 2010: 6). In Weber’s view, particularism leads to ad hoc decision-making based on social relationships and can undermine organizational standards by causing individuals to make continual exceptions, rendering rules overly “malleable [and] a function of the relationships involved” (p.4). He suggested that bureaucracy should make organizations more effective by replacing particularism with a logic of “universalism” in which “rules and governing behavior are precisely and explicitly formulated and roles and role relations are prescribed *independently of individuals*

occupying the structure" (Adler and Borys 1996: 67, emphasis added). This approach, Weber concluded, should ensure that decisions are based on objective criteria that advance organizational goals, rather than on individuals' "particularistic" needs (Canales 2014; Trompenaars 1994).

Much of our understanding regarding formal structure in new ventures builds on Weber's logic. Generally speaking, formal structure has been shown to help new ventures overcome a "structural liability of newness" and increase their survival rates (Aldrich and Yang 2012; Sine et al. 2006; Stinchcombe 1965). This is because new ventures often lack systematic, planful structures, which leads to "role ambiguity and uncertainty" as well as particularistic, ad hoc decision-making that "impedes organizational and individual action" (Sine et al. 2006: 122). This ad hoc approach also often involves "rent-seeking" whereby individuals bend rules or make decisions in a way that allows them to leverage organizational resources to advance their own personal goals; this rent-seeking often occurs at the expense of the venture and thus destroys value (Carney 2005). Formal organizational practices thus tend to reduce uncertainty, increase efficiency, and minimize rent-seeking by clearly delineating "who does what when, and for whom" (Adler 2012; Dalton 1980; Lee 2022; Vlaar et al. 2006).

Despite extensive research on formal organizational structure in young firms, little is known about how purging particularism impacts new ventures in which the founders' families are actively involved (Israelsen 2023; Pounder 2015). For instance, much of this work has been conducted in the context of high-tech or "Silicon-Valley"-style startups with minimal family presence (eg. Burton and Beckman 2007; Baron, Hannan and Burton 1999; Baron, Burton and Hannan 1999; Colombo et al. 2016). Hence, we know little about how family involvement influences the returns new ventures obtain from implementing formal structures based on a logic of purging particularism (eg. Israelsen 2023).

This focus on "Silicon-Valley"-style startups in research is significant for three reasons. First, it contradicts the reality that most new ventures globally are family firms (Aldrich and Cliff 2005; Chua, Chrisman and Chang 2004; Israelsen 2023). Second, it ignores family business research suggesting that the "particularistic" goals of family stakeholders are often not a form of value-destroying rent-seeking but are instead motivated to support their venture's survival (Carney 2005; Chrisman et al. 2006; Yilmazer

and Schrank 2010). Families feel strong commitment to firms bearing their name, seeing them as vehicles for their future generations' wealth (Gomez-Mejia et al. 2011; Israelsen 2023; Nason, Mazzelli and Carney 2019); particularism for ventures in which founders' families are very involved, then, will often be *value-creating* because it allows family members to act on impulses which are motivated to improve the venture's survival. Given these very different manifestations of particularism, returns to formalizing new ventures by "purging particularism" may vary depending on overlap between "business system" and "family system" (Davis and Tagiuri 1996; Stafford et al. 1999).

In the next section, we outline how differing levels of family-business overlap might influence the effectiveness of formalization.

Family Involvement in New Ventures

Starting a new venture is often a family affair (Aldrich and Cliff 2005; Gomez-Mejia et al., 2011; Israelsen 2023; Pounder 2015). However, the extent to which a founder's family members, with their attendant relationships, values, and traditions - or their "family system" (Stafford et al. 1999: 204) – are involved in the business varies significantly across ventures (Davis and Tagiuri 1996; Pounder 2015). We argue that the integration or separation between an entrepreneur's "family system" and their venture's "business system" influences whether formalizing the firm by "purging particularism" within it will enhance or reduce its performance.

At one extreme, entrepreneurs might receive early funding from their parents or siblings but run the businesses without further family involvement. These ventures maintain distinct resources, obtain funding from external sources like banks and investors, and hire talent from external labor markets (Gorman and Sahlman 1989; Kaplan and Warren 2009). Following prior work, we refer to these as "separated" ventures, where the "family systems" and "business systems" are effectively "separated" (Haynes et al. 1999; Muske et al. 2009; Stafford et al. 1999).

At the other extreme, some entrepreneurs fully integrate their ventures with their families. They share resources freely between the two systems, hire primarily their family members, and fund growth

through earned revenues and family borrowing (Carney, 2005; Davis and Tagiuri 1996; Gomez-Mejia et al. 2007; Israelsen 2023; Stafford 1999). Following prior work, we refer to these as "intermingled" ventures, given that they intermingle family and business resources, often maintaining a single joint bank account between the two systems (Fitzgerald and Muske 2002; Muske et al. 2009; Yilmazer and Schrank 2010).

These distinctions are outlined in the figures below, which are adapted from Stafford et al. (1999).

[Insert Figure 1a about here]

[Insert Figure 1b about here]

Particularism in Separated vs Integrated Ventures

We argue that, for "separated" firms, purging particularism will produce the *value-creating* benefits demonstrated in prior work (Colombo et al. 2016; Sine et al. 2006). This is because such firms, given their low levels of family involvement, will most resemble the "Silicon-Valley-style" startups that have been the focus of this literature (e.g., Baron et al. 1999; Burton et al. 2019). And, without resources and control from family members, separated firms will tend to seek support from external stakeholders like capital providers, potential talent from external labor markets, and non-family employees.

Given this external orientation, particularism will generally be counterproductive in separated ventures for two reasons. First, particularistic practices tend to be inefficient for firms which primarily obtain resources from external (non-family) stakeholders (Carney 2005; Maniha 1975). Specifically, employees in such ventures tend to come from external labor markets and thus lack a deep, shared history in the firm; they may therefore make ineffective decisions when deviating from organizational rules, standards, and criteria. On the one hand, they may bend or subvert rules for personal gain at the venture's expense (Maniha 1975; Pearce, Branyiczki and Bigley 2000). On the other hand, even well-intentioned employees may lack deep knowledge of and commitment to the venture's goals (Canales, 2014). Hence, deviating from organizational rules and standards may result in ad hoc, poorly-aligned decisions which result in inefficiency, organizational uncertainty, and reduced performance (Sine et al. 2006).

Particularism also reduces performance in separated ventures through symbolic mechanisms. Specifically, external resource providers tend to view such practices with skepticism. Banks and investors,

for instance, often see particularistic practices as "backwards," "opaque," and "unpredictable," leading them to withhold capital from ventures which implement them (Carney 2005; Luo and Chung 2005). Similarly, potential employees may see particularistic practices as a form of "favoritism" or "cronyism", and thus choose not to join them (Burton and Beckman 2007; Pearce et al. 2000). Thus, separated ventures suffer a "legitimacy discount" for using particularistic practices above and beyond any functional deficits that may attend their implementation (Luo and Chung 2005).

As a result of these "particularism penalties", separated ventures tend to benefit from purging particularism by adopting universalistic practices such as formal role structures, organization charts, and other bureaucratic elements which emphasize uniform standards and clear criteria (Adler 2012; Adler and Borys 1996; Dalton 1980). Doing so should enhance their legitimacy (Burton and Beckman 2007; Carney 2005), improve decision-making, reduce uncertainty (Sine et al. 2006), and enhance overall improve performance by constraining and aligning employee decisions with the venture's goals (Burton et al. 2019; Dalton et al., 1980; Colombo et al., 2016). These arguments align with prior work and are not inherently novel. However, we outline them there and explicitly link them to family involvement to connect our work with extant literature.

This discussion leads to the following hypothesis:

H1a: Increased formal structure via a logic purging particularism will increase the performance of separated ventures.

In contrast with separated firms, we argue that formalizing "intermingled" ventures based on purging particularism will be *value-destroying*. This is because such firms often resemble "family-controlled ventures" (Carney 2005) more than they do the "Silicon-Valley-style" ventures. In these firms, the founders' family members are likely to remain highly involved in both strategic and operational activities, and the firm is likely to prioritize leveraging the unique "strategic resources" that families are known to provide (Aldrich and Cliff 2005; Sirmon and Hitt 2003). These resources include a shared history and values (Luo and Chung 2005), effective decision-making and the ability to leverage social

capital (Carney 2005; Chrisman et al. 2006), and an altruistic orientation among employees (Gomez-Mejia et al. 2011; Schulze et al. 2003). As a result of this emphasis on leveraging such family-centered resources, intermingled firms are more likely to be internally focused – in that they will prioritize seeking capital, labor, and other resources from kin – than separated firms.

Given this family-centered orientation, particularism presents unique benefits for intermingled ventures which have been under-explored in extant literature on formal structure in new ventures. First, employment and coworker relations in family-controlled firms are "embedded in the parent-child relations found in the household, and so are characterized by altruism" (Schulze et al. 2003: 473). Altruism "compels parents to care for their children, encourages family members to be considerate of one another, and fosters loyalty and commitment to the family and firm (ibid.)". Hence, employees in intermingled ventures are likely to work beyond their job scopes to ensure the well-being of their kin, colleagues, and the organization (Carney 2005; Nason et al. 2019; Schulze et al. 2001). Hence, allowing for particularistic discretion within them tends to result in employees making decisions which – while perhaps not formally outlined in company standards and policies – result in enhanced performance: far from being "rent-seeking", these decisions often result in employees contributing greater effort to the venture to ensure its viability and competitiveness.

Second, intermingling family resources within the firm results in what Carney (2005) refers to as "parsimony": family members leverage organizational resources responsibly to minimize waste and preserve wealth. This desire to minimize waste stems from the fact that the family's wealth is often non-trivially bound up in the firm, and thus its failure would entail the family's ruin. Parsimony is also buttressed by the aim to maintain the firm as an intergenerational asset for future kin (Nason et al. 2019; Gomez-Mejia et al. 2007; Gomez-Mejia et al. 2001). Specifically, family members are often motivated to maintain the firm so that it provides jobs and wealth for their children and grandchildren and therefore take personal pains to ensure its continuity (Gomez-Mejia et al., 2011; Nason et al., 2019). Hence, allowing for particularistic deviations from universal rules within intermingled ventures often results in

decisions which – while perhaps not formally stated in organizational rules and criteria (Vlaar et al. 2006) - better preserve the organization's (and thus the family's) wealth and longevity.

Finally, the increased family involvement that attends the intermingling of business and family resources results in an employment context where employees are intimately aware of each other's skills and the venture's goals. Regarding awareness of each other's skills, family members – as well as their kin and close associates – tend to have fine-grained information about each other's capabilities due to their lifelong interactions with each other (Davis 1983; Lansberg 1983; Luo and Chung 2005; Schulze et al. 2003b). Similarly, employees tend to intimately understand the venture's goals and performance, given that the intermingling of the family's resources with the business implies both visibility into and interest regarding the venture's affairs (Nason et al. 2019; Gomez-Mejia et al. 2011; Pounder 2015). Managers and employees may use both sources of information to better align their decisions with the "spirit" of the venture's policies, even if doing so requires them to deviate from their "letter" (Canales 2014). For instance, an intermingled venture's manager may need to report to their brother on issues related to customer management; however, they may know that their brother has a distinct bias against a certain customer (perhaps it is their ex-girlfriend) and may thus not be willing or able to make decisions about them. The manager may thus decide to relay information to the family's father, who can then leverage their role as the family's patriarch to mitigate conflict and ensure that good decisions are made (Lansberg 1983; Luo and Chung 2005).

These arguments suggest that, unlike in separated firms, particularism often provides distinct advantages for intermingled ventures. It allows employees to bend organizational policies to enforce their "spirit" over their "letter" (Canales 2014), minimize waste, ensure long-term sustainability, and leverage family altruism and information to optimize performance. In line with these arguments, Carney (2005: 256) views particularism as a "competitive advantage" for family firms, while Aldrich and Cliff (2003) refer to it as a "unique strategic resource" for them; Sirmon and Hitt (2003) even go as far as calling it "survivability capital," as particularism allows family members to act on impulses which provide their firms with survival advantages over non-family firms.

These arguments suggest that formalizing intermingled ventures based on a logic of "purging particularism" will often be value-destroying because it will restrict these impulses, effectively removing these "unique strategic resources" from them. This reasoning leads to the following hypothesis:

H1b: Increasing formal structure via the purging of particularism will decrease the performance of intermingled ventures.

The Mediating Role of Formal Role Structures

When new ventures formalize of their organizational structures, much of the constraint they place on employees' behavior stems from the formal roles these individuals assume (Burton et al. 2019; Burton and Beckman 2007; Dalton et al. 1980; Lee and Edmondson 2017). This is because formal organizational roles "reflect what entrepreneurial team members are requested (and expected) to do and combines with the decision authority assigned to individuals who fill the roles." (Colombo et al. 2016: 472). In other words, when organizations formalize, they tend to restrict behavior chiefly through placing constraints and expectations on organizational members by outlining and articulating the roles that these members occupy (Burton and Beckman 2007).

Given that our prior theorizing suggested the positive relationship between increased firm formalization and performance for separated ventures to be driven by increased constraints on employee behavior, these arguments here suggest the following hypothesis:

H2a: The positive effect of purging particularism on performance for separated ventures will be mediated by increased formalization of the organizations' role structures.

When intermingled ventures increase their formal structure through the purging of particularism, we should also expect this negative impact on firm performance to be partially driven by increased rigidity of formal role structures in the business. This is because formalized, "mechanistic" structures "greatly constrain the actions of their members by accurately designing their roles and behaviors" (Colombo et al. 2016: 435). While constraining the behaviors of individuals may generally increase firm

performance by minimizing particularistic behaviors, the "unique resources" of altruism, parsimony, and intimate knowledge among employees of each other's skills (eg. Burton et al. 2019; Burton and Beckman 2007) in intermingled firms is itself particularistic: family members are committed to each other and to their family's well-being. Their ability to act out of their job descriptions to do what is best for the family is also predicated on their ability to exercise "individual discretion" and act on idiosyncratic knowledge of their families gained over a lifetime of shared experiences with them (Davis 1983; Ingram and Lifschitz 2006; Israelsen, 2023; Lansberg 1983; Stafford et al. 1999). Rigid formal role structures should restrict these impulses, thereby robbing intermingled ventures of their "unique strategic resource" of family commitment.

In our own fieldwork, our informants shared with us a number of anecdotes which suggest that strict, formal roles can reduce the ability of family members to act on their altruism and commitment to the business. For example, one of our interviewees worked at their family's bicycle shop. He described in detail how, prior to participating in our intervention (see "The Intervention" in the next section), he and his siblings frequently performed whatever roles were needed throughout the day to ensure that all important tasks were covered in the business: he might begin by doing supply runs, move to the register, and then make deliveries as needed. After the training, however, the firm implemented strict job descriptions and a formal organizational chart which determined who was accountable to whom and for what. As a result, he was no longer able to move freely between tasks throughout the business but was instead required to remain accountable for a single role – managing supplies; he would then need to speak with his brothers before taking over deliveries, orders, or the register. Hence, and by formalizing role structures within the firm, the venture lost the unique resource of flexible, committed family labor.

These theoretical arguments and anecdotes suggest the following hypothesis:

H2b: The negative effect of formalization on performance for intermingled ventures will be mediated by increases in formal role structure.

III. DATA and METHODS

Data and Sample

Our data were collected between 2017 and 2020 as part of an intervention in Peru conducted by a global non-profit organization ("NPO") provides business training to entrepreneurs.

The sampling frame for our study came from the business banking clients of a major bank in Peru, "Banco" hereafter. NPO and Banco collaborated via the following process to generate our sample. First, using a proprietary algorithm in Banco's risk department, they identified business clients most at risk of defaulting on their loans within the next 60-90 days. We were only permitted to work with these high-risk clients because they would benefit most from NPO's training programs (see "The Intervention", below). Second, to ensure NPO was training actual firms, not just entrepreneurial "ideas", this initial list was filtered to retain only those that: 1) had an active line of credit of $100,000 (350,000 Peruvian sole) or more, 2) had been in business for at least a year, and 3) had a government tax ID.

These first two steps yielded a sample of roughly 4,000 small-medium-sized enterprises (SMEs) in Peru. To construct the treatment and control groups, the sample was then split randomly: 2,000 were earmarked to receive treatment and 2,000 as the control group. NPO then manually contacted the 2,000 firms selected for treatment, informing them they qualified for free training provided jointly by the bank and NPO. About 40% agreed to participate, yielding a treatment sample of 812 firms. Seventeen firms dropped out during the program (2.1% attrition) and were removed from the sample. After the training was completed (see "The Intervention" below), but before analysis was conducted, firms older than 10 years were dropped from the data[1]. This step was taken because our hypotheses involve "new ventures". This process yielded a treatment group of 777 firms. The same procedure was followed for the control group and yielded 624 firms. The only difference for the control group was that, though they were offered a training when NPO reached out by phone, they were only given a "diagnostic" of their business practices at midline and a diagnostic of their performance at endline (see **Figure 2** in the next section for more details). Hence, the control group received no training, but diagnostics of these ventures was taken at key points throughout the study.

[1] We also conduct all analyses with the full sample of firms (which includes firms up to 30 years old). The pattern of statistical significance for these analyses are identical to those shown here, and the magnitude of coefficients is nearly identical.

The firms in our final sample – both treatment and control – were SMEs in the Lima metropolitan area, one of the largest metropolitan areas in Peru. These small firms were six years old on average (see **Table 1**), and many were run by families, couples, or sole proprietors. Given that all firms had been in business for at least a year and maintained an active line of credit of $100,000 or more, few were "mom and pop shops": they tended to have at least a few employees and were established in their communities. Examples include tour companies (individuals with vans and a storefront providing tours to foreigners), individuals installing propane tanks for residential homes ("convertidores"), export businesses, and restaurants.

The Intervention

The intervention involved NPO randomly providing entrepreneurial training for firms in our treatment group (the control group received only a diagnostic at midline and a performance evaluation at endline). The training was conducted as follows:

When participants accepted the invitation, trainers ("Consultants") from NPO contacted them to set up the first in-person visit. The intervention began with this "first visit" between July and December 2017. During this visit, the Consultant provided a diagnostic survey of the venture's management practices. The control group did not receive this visit; rather, after accepting, they were told that they would receive a "diagnostic visit" within 6-7 months. We return to this issue in "Statistical Methods".

Following the first visit, the program included 14-18 in-person training sessions over 6-7 months. Each training round involved randomly assigning a Consultant to each firm; randomization was conducted at every round of training to mitigate differences in training tendencies between consultants. The control group did not receive any training during this period.

Training sessions focused on developing organizational structures, formalizing routines, financial records, roles, salaries, and decision rights. Per definitions of "universalistic" procedures, emphasis was placed on codifying – in writing – any formal procedures implemented so they could be consulted dispassionately and implemented uniformly across situations and personnel (Adler 2012; Ma and Parks

2007; Vlaar et el. 2006). For instance, trained ventures could not secure the highest score possible on an assessment of formal structure unless their job descriptions and organization charts were "written down and available for all to see". Operators were also invited to a monthly group training session with other SME borrowers.

After the 6-7 months of training, NPO conducted a "midline survey" for both the treatment and control groups. NPO then had no contact with either group of firms for 12-15 months, after which point they conducted a final site visit. In this "Endline visit", NPO completed another Diagnostic of both treatment and control ventures with the firms' leadership; they also recorded the firms' monthly revenues – the main outcome variable in our study. This timeline is illustrated in the figure below.

[Insert Figure 2 about here]

Key Variables

Dependent Variable. Our key dependent variable is monthly revenues. Our hypotheses relate increases in formal structure to firm performance, and revenues are an important "hard" measure of this outcome, especially in young firms (Burton et al. 2019; Colombo et al. 2016; Dalton et al. 1980; McKenzie and Woodruff 2017). Revenues are also preferred to other performance measures for new ventures because they are more accurate: profitability, for instance, can be easily manipulated and is difficult to interpret outside of public markets due to a lack of uniform guidance in how it can be calculated (Hand 2005). In contrast, revenues are verifiable with receipts of sale and bank deposits. We log-transform this variable to account for skewness.

Independent Variables. We have four independent variables in this study. The first is a dichotomous variable indicating whether a firm was in the treatment group. Given that our training program focused on firm formalization through universalistic organizing principles, we interpret this variable as a measure of exposure to formalization practices based on "purging particularism" during the 6-7 months of training.

The second independent variable is a dichotomous variable indicating whether a firm maintains separate bank accounts for business and family resources, measured at baseline. Following prior work, firms which do not separate their business bank accounts from the family bank accounts of their founders are referred to as "intermingled" firms (Haynes et al. 1999). Intermingled firms maintain weaker boundaries between the founders' business and family structures, leading to greater family influence and involvement on the venture's decisions (Muske et al. 2009). For instance, when the venture and the founder's family share an account, the family may influence how funds are spent to align with their values and lifestyle aspirations (Gomez-Mejia et al. 2011; Siebels and Knyphausen-Aufseß 2012; Yilmazer and Schrank 2010).

The third independent variable is an ordinal variable indicating the extent of role formalization in the venture. It is measured at midline by trainers examining the venture's job descriptions and organization charts. The variable values are: 1 = "No formal structure," 2 = "Roles are understood but not written down," and 3 = "Roles are understood, written down, and visibly displayed on an organization chart."

Statistical Methods

Given that our empirical strategy involved a randomized controlled trial (RCT), regression coefficients from an ordinary least squares (OLS) regression of outcomes on treatment have a causal interpretation as long as the treatment was randomly assigned (Angrist and Pischke 2009; Burtless and Greenberg 2005; Heckman and Smith 1995). We thus confirm that randomization was successful and then estimate our main treatment effects and test our hypotheses via OLS regressions. To test mediation hypotheses, we use structural equation models (SEM) which are useful in data structures like ours where the initial variable in a causal pathway is exogenous (treatment assignment) and there is time precedence between others (midline variables measured 6-7 months after treatment and 12-15 months before dependent variables) (Kline 2023).

To ensure that our treatment was truly randomly assigned, we examine the balance of pre-treatment covariates across treatment and control groups. This analysis shown in the table below reveals that the sample is largely balanced, but the treatment group appears slightly older than the control group and their ventures themselves are slightly younger. Notably our dependent variable is absent from these tables; this omission is explained below.

[Insert Table 1 about here]

Because many of our analyses rest on comparisons across groups – those whose business bank accounts are linked with family funds and those whose business bank accounts are separate from those of their founders' families – we also replicate our balance tables within each of these subsamples. The tables below reveal a pattern of balance within each group that is identical to that in the overall sample: generally, the samples are balanced along all covariates except for founder age and firm age.

[Insert Table 2 about here]

Across all balance tables, our treatment group consists of firms which are slightly older than the treatment group (8 months) and which have slightly older founders (~2.5 years). Though these differences are small, we wanted to ensure that randomization did not fail, resulting in fundamentally dissimilar populations being sampled between the treatment and control groups (Burtless and Greenberg 2005; Kremer, Miguel and Thornton 2009). To address this possibility, we conduct a series of tests based on the conditional independence assumption (Angrist and Pischke 2009; Washington, 2008). This process involved running pooled OLS models of logged monthly revenue on the treatment variable and all possible combinations of covariates. If treatment is truly randomized, the treatment coefficient should not vary across models. Using equations by Clogg et al. (1995), our analysis indicates that the treatment coefficient does not vary significantly across various specifications. These results suggests that the treatment effect is independent of pretreatment covariates, further confirming successful randomization. More details are included in **Appendix III**.

Lastly, we address balance on our dependent variable. Banco did not sponsor two rounds of data collection for our control group, so we lack pre-treatment data for them. However, we have post-treatment

data for control groups of both separated and intermingled firms, representing a counterfactual for treated firms. We assess if outcomes for separated and intermingled firms would have differed systematically absent treatment. Kernel density plots of raw monthly revenue data show no significant difference: densities for control groups of separated and intermingled firms are centered at the same mean (10.960 vs 10.918, t-test of difference = 0.57), and a Kolmogorov-Smirnov test shows no difference between distributions (p-value = .292)[2]. These results support the claim that our randomization was successful and that there was no systematic differences between treatment and control groups or between separated and intermingled firms pre-treatment.

[Insert Figure 3 about here]

Despite this evidence that treatment was successfully randomized, we also re-run all models 1) controlling for founder and firm age, and 2) with all possible covariates to account for any possible selection effects. Results are nearly identical across all specifications. In this paper, we report all models with all controls for transparency so that readers can examine the effects of covariates on our key outcomes; other models are available on request.

IV. RESULTS

The results of our main regressions are shown below. **Model** 1 contains only pre-treatment covariates[3], **Model 2** adds the treatment variable, and **Model 3** includes the interaction term of treatment and whether the firm intermingles business and family bank accounts.

[Insert Table 3 about here]

Overall, these results support our hypotheses. In **Model 3**, the main effect of firm formalization training is positive and highly significant. On average, "separated" firms completing the training program saw an increase in monthly revenues of 82%. Given successful randomization, this result has a causal

[2] Note, however, that there are clear differences between the distributions of the treatment groups in these two figures; we return to this observation when discussing our results.

[3] For the sake of transparency, we show models here including all covariates. However, and consistent with our treatment being randomly assigned (ie. independent of all covariates), models excluding the covariates or including different combinations of them yield exactly the same results (Angrist & Pischke, 2009; Kremer et al., 2009; Washington, 2008). These analyses are available upon request.

interpretation as the average treatment effect (ATE) of firm formalization on sales for firms separating their family and business bank accounts (Angrist and Pischke 2009; Heckman and Smith 1995). These results support **hypothesis 1a** and also align with prior work on the formalization of new ventures (eg. Sine et al. 2006).

For intermingled ventures, the results are less positive. The interaction term between treatment and intermingling is highly negative and significant in Model 3, with the net effect indicating a 34% reduction in monthly sales for these firms (exp(.603-1.022)=.6578 multiplier). These results support **hypothesis 1b**. The marginal graph below illustrates these first two findings.

[Insert Figure 3b about here]

Additionally, **figure 1a** shows kernel density plots suggesting that post-treatment revenue distributions for the control groups are nearly identical, while the distributions for the treatment groups differ significantly. The treated "separated" firms' revenue distribution shifts right, indicating a positive effect, while the treated "intermingled" firms' revenue distribution shifts left, indicating a negative effect. These results provide further, descriptive support **hypotheses 1a and 1b**.

We next test our mediation hypotheses using structural equation models (SEMs) via the MEDSEM package in STATA. To test hypothesis 2a, we drop intermingled firms and estimate SEMs on "separated" firms, examining the causal pathway between "treatment," "formal role structures," and "logged monthly revenues." The path diagram in **Figure 3a** shows that formalization positively impacts monthly revenues through formal role structures. However, the coefficient from "formal role structure" to "logged monthly revenues" is only marginally significant. Similarly, results from the Delta Method ($p < .078$), Sobel Test ($p < .078$), and Monte Carlo method with 5,000 bootstrapped replications ($p < .088$) also converge and indicate a marginally statistically significant mediation, lending partial support to **hypothesis 2a**.

[Insert Figure 4a about here]

To test hypothesis 2b, we drop separated firms and estimate SEMs on intermingled firms. The path diagram in Figure 3b suggests that the negative relationship between increased formalization and logged monthly revenues is mediated through increased formal role structures. Results from the Delta Method ($p < .000$), Sobel Test ($p < .000$), and Monte Carlo method with 5,000 bootstrapped replications ($p < .000$)

also converge and indicate a highly statistically significant mediation. All of this lends support to **hypothesis 2b**.

[Insert Figure 4b about here]

To summarize, our results indicate that the effect of firm formalization via purging particularism on young firms depends on the extent to which they maintain clear boundaries between business and family structures. Firms without such boundaries experience a 34% reduction in revenues, while firms these maintaining boundaries enjoy an 82% increase in sales. Both effects are mediated by increases in formal role structures, indicating divergent effects for these populations of this organizational practice.

V. ADDITIONAL AND POST-HOC ANALYSES

Thus far, we have built and tested theory suggesting that imposing formal structure intermingled ventures —those integrating family and business structures—via a logic of "purging particularism" disrupts their performance. These declines appear to be mediated by increases in the firm's formal role structure. To further verify our claims, we conducted additional analyses to rule out alternative explanations and further test our proposed mechanisms. These results are outlined in **Models 4 and 5** of **Table 3**.

First, we assessed alternative measures of firm performance by using "number of employees" as the dependent variable. This aligns with prior entrepreneurship work suggesting that headcount growth is a crucial measure of success for young firms (e.g., Colombo et al. 2016; McKenzie and Woodruff 2017). The results, outlined in **Model 5** in **Table 3**, show that the training program has no impact on employee headcount for separated firms, but intermingled firms lose an average of 2.5 employees following the training. Given that the average firm in our sample started with 5.35 employees, this result is economically significant and consistent with declines in firm performance leading to reductions in headcount.

Third, we identified another mechanism through which purging particularism might reduce commitment and altruism in intermingled ventures. While our hypotheses suggested that imposing formal

structure on intermingled ventures might reduce family members' *ability* to act on their altruism and commitment, this process could also reduce their *feelings* of altruism and commitment. This might happen if formalizing the venture creates the impression that business priorities overshadow family needs, leading to reduced commitment and altruism at work, and hence reduced performance. For example, if the family relies on cash infusions from the business, newly imposed financial controls might prevent these transfers, thus improving venture performance *at the expense of the family*. A quote from one of our interviews suggests this possibility:

"[starting from the training] Until now there are still resentments, outstanding debts to collect, the fact that I have decided to close the possibility of them having the company's money, affected them too much and also affected me as a company because I was left without capital, it even made them distrust the decisions and not want to work anymore."

In sum, the formal training caused conflicts between the entrepreneur and her family because the family was no longer able to freely access the firm's capital when they wanted it. This created disagreements, cut off the capital loans she had previously been receiving from her family, and caused employees to distrust her decisions. Using SEMs, we formally examine the causal pathway between "treatment," "family lifestyle aspirations," and "logged monthly revenues." "Family Lifestyle Aspirations" is measured by NPO trainers and indicates the extent to which a family is falling behind on monthly bills, rated on a 3-level categorical scale where "1" indicates "frequently falling behind on household payments by more than 60 days" and "3" indicates "never falling behind on household payments by more than 60 days."

We addressed reverse causality concerns for this analysis, considering that instead of reduced family lifestyle aspirations leading to reduced firm performance, the opposite might be true. Though the 12–15-month lag between variable recordings helps address this possibility, firm operators might observe declining financial performance during training and adjust household expenditures accordingly, implying a causal relationship from financial performance to "family financial position." To rule out this possibility, we orthogonalized "family financial position" from NPO's mid-line assessment of the venture's quality. This approach helps rule out reverse causality, as suffering financial performance would influence firm

quality. Similar results obtain when we do not orthogonalize family lifestyle aspirations from firm quality (see **Appendix II**).

Figure 5c illustrates this analysis. We find that increased formalization via universalistic principles reduces the family's ability to meet its lifestyle aspirations, which reduces firm performance, even as the "formal structure" mediator remains significant. The overidentification due to the second mediator allows us to assess model fit, which appears adequate (RMSE = .054, TLI = .993, CFI = .956), suggesting formal structure creates tension between business and family systems in intermingled ventures.

[Insert Figure 5c about here]

Finally, we used the preceding analysis as a "placebo test" (Angrist and Pischke 2009). We replicated our mediation analysis on "separated" ventures. If our proposed mechanisms are operative – if there is an impression that the business is being prioritized "at the expense of the family" - we should not observe the same dynamics for separated ventures. This is because such ventures maintain clear boundaries between their business and family structures, and hence the family is less likely to rely on the business for cash infusions. Consequently, the family's ability to meet lifestyle aspirations should not mediate the relationship between firm formalization and performance for separated firms. **Figure 5b** outlines the mediation path diagram for separated firms, showing no mediation effect of household debt repayment, further supporting our mechanisms.

[Insert Figure 5a about here]

VI. DISCUSSION and CONCLUSIONS

In this paper, we revisit the relationship between formalizing the structure of new ventures via "purging particularism" and their performance. Specifically, we examine this relationship in the context of ventures involving the founders' families—what we call "intermingled" ventures. We theorize that purging particularism will reduce the performance of intermingled ventures because doing will reduce the ability of family members to act on their commitment, altruism, and shared vision for the venture; given that these impulses represent unique "strategic resources" for intermingled firms, restricting them should reduce firm performance (Aldrich and Cliff 2005; Gomez-Mejia et al. 2011; Sirmon and Hitt 2003). We

find support for this argument and also find that this effect is mediated through increased formalization of role structures in the ventures; post-hoc analyses indicate that purging particularism may also incite family conflict, thereby reducing stakeholder motivation and venture performance.

Our results also contrast with classical findings in organization theory. In particular, we suggest that canonical findings regarding the positive relationship between formalization via a logic of purging particularism and the performance of young firms will not obtain when firms do not maintain clear boundaries between their business and family structures (Yilmazer and Schrank 2010). This discrepancy likely stems from complimentary gaps in the entrepreneurship and family business literatures: little work in the entrepreneurship literature has assessed formal structure in family firms (Pounder 2015), whereas the literature on family firms has tended to empirically privilege mature organizations (Gomez-Mejia et al. 2011). In addition, most of our understanding regarding the relationship between formal structure and new venture performance comes from studies of "Silicon-Valley" style startups in which the family is a marginal or omitted stakeholder (Baron et al. 1999; Burton et al. 2019; Colombo et al., 2016). However, our findings reveal an important boundary condition in the relationship between formal structure and young firm performance – that of the family.

Our results also provide implications to entrepreneurs in family businesses. These implications are needed given that "research has focused on family firms as established businesses, largely neglecting the role of the family at the startup stage" (Gomez-Mejia et al. 2011: 684), which has led to a "gap in the field of research in the education marketplace in terms of how to help family-owned businesses navigate the delicate balance between family relationships, strategic business decisions and shareholder consideration" (Pounder 2015: 120). Our study indicates that intermingled ventures differ fundamentally from others, making traditional firm formalization practices potentially inapplicable (e.g. Burton et al. 2019; Sine et al. 2006). While formalizing organizational structure is likely beneficial, a logic based purely on "purging particularism" may be harmful. New curricula and prescriptions should explicitly consider the nuanced and emotional dynamics of families within these ventures (e.g. Davis 1983; Lansberg 1983; Stafford et al. 1999).

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APPENDIX I: Tables

Table 1 – Balance

Variable	(1) Control	(2) Treatment	(3) Difference
Intermingled	0.763	0.743	-0.020
	(0.426)	(0.437)	(0.023)
Founder Age	43.006	45.481	2.475***
	(9.781)	(9.851)	(0.528)
Founder Sex	0.537	0.568	0.031
	(0.499)	(0.496)	(0.027)
Firm Industry	2.248	2.305	0.057
	(0.880)	(0.868)	(0.047)
Loan Size	73,842.711	75,975.859	2,133.149
	(65,929.227)	(65,867.719)	(3,542.171)
Firm Age	6.405	5.673	-0.732***
	(2.234)	(1.971)	(0.112)
Billing Year	868539.000	878839.625	10,300.592
	(816477.938)	(757591.750)	(42,163.074)
Risk Segment	6.000	6.000	0.000
	(0.000)	(0.000)	(0.000)
Observations	624	777	1,401

Table 2 – Balance (Intermingled vs Separated Firms)

	INTERMINGLED BALANCE			SEPARATE ACCOUNT BALANCE		
	(1)	(2)	(3)	(4)	(5)	(6)
Variable	Control	Treatment	Difference	Control	Treatment	Difference
Founder Age	43.113	45.456	2.343***	42.662	45.555	2.893***
	(9.930)	(9.564)	(0.603)	(9.310)	(10.660)	(1.096)
Founder Sex	0.529	0.577	0.048	0.561	0.540	-0.021
	(0.500)	(0.494)	(0.031)	(0.498)	(0.500)	(0.054)
Firm Industry	2.229	2.322	0.093	2.311	2.255	-0.056
	(0.887)	(0.864)	(0.054)	(0.856)	(0.880)	(0.094)
Loan Size	75,564.141	76,301.797	737.654	68,306.219	75,035.539	6,729.318
	(72,763.805)	(65,490.367)	(4,264.523)	(35,676.395)	(67,101.672)	(6,066.600)
Firm Age	6.349	5.714	-0.635***	6.588	5.555	-1.033***
	(2.226)	(1.965)	(0.129)	(2.259)	(1.989)	(0.229)
Billing Year	856466.938	910182.250	53715.320	907365.562	788416.188	-1.189e+05
	(833583.188)	(790493.312)	(50,169.840)	(760249.562)	(646788.438)	(75,602.094)
Risk Segment	6.000	6.000	0.000	6.000	6.000	0.000
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Observations	476	577	1,053	148	200	348

Table 3 –Results

	(1) **Covariates** *DV: ln(rev/month)*	(2) **Training** *DV: ln(rev/month)*	(3) **Intermingle** *DV: ln(rev/month)*	(4) **Emp.** *DV: Headcount*
Founder Age	.002	.004	.003	.015
	(.003)	(.003)	(.003)	(.015)
Founder Sex	.002	.006	.022	.217
	(.048)	(.048)	(.045)	(.256)
Firm Industry ("trade" omitted as baseline)				
Manufacturing	.06	.058	.059	.171
	(.079)	(.078)	(.071)	(.452)
Services	-.041	-.037	-.012	-.354
	(.058)	(.058)	(.052)	(.31)
Loan Size	.000	.000	.000	.000
	(.000)	(.000)	(.000)	(.000)
Firm Age	-.009	-.017	-.013	-.112*
	(.012)	(.012)	(.011)	(.066)
Billing Year	.000*	.000*	.000**	.000
	(.000)	(.000)	(.000)	(.000)
Training		-.157***	.603***	.799
		(.047)	(.096)	(.618)
Training X Intermingle			-1.022***	-2.51***
			(.108)	(.674)
Intermingle			-.043	-.428
			(.076)	(.465)
Constant	10.738***	10.803***	10.782***	6.582***
	(.129)	(.128)	(.136)	(.797)
Observations	1401	1401	1401	1401
R-squared	.008	.015	.163	.055

Standard errors are in parentheses
*** p<.01, ** p<.05, * p<.1

APPENDIX II: Figures

Figure 1a – Overlap Between Business and Family Systems: Overview

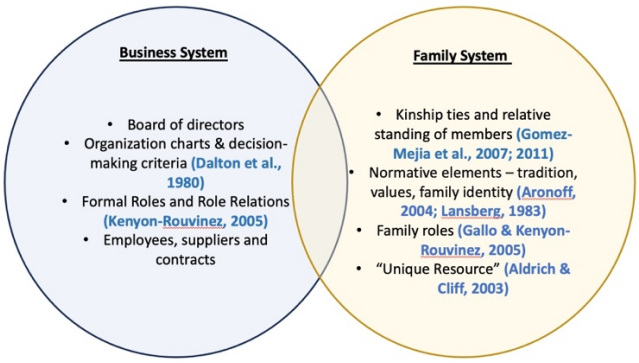
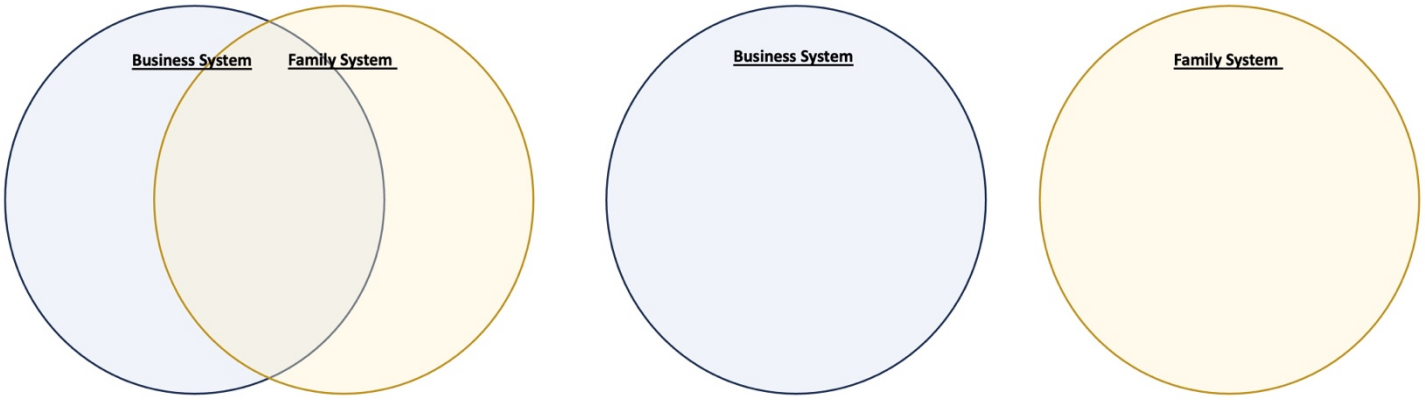


Figure 1b – Overlap Between Business and Family Systems: "Separated" vs "Intermingled" Firms



"Intermingled" Ventures – Business and Family Systems overlap: ventures use considerable family resources, talent, etc. Often occurs via shared resources (eg. a single, joint bank account)

"Separated" Ventures – Business and Family Systems do not overlap: ventures rely on external, non-family resources, talent, etc. Resources are often separated (eg. separate bank accounts – one for family, one for business)

Figure 2 – Intervention Timeline and Variables

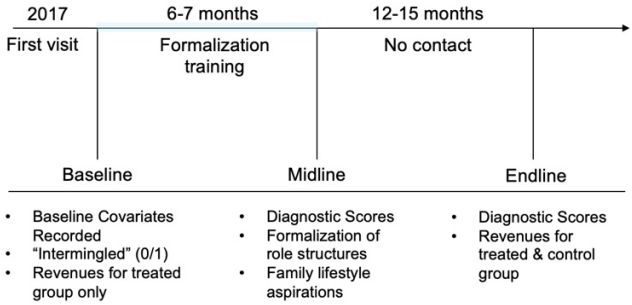
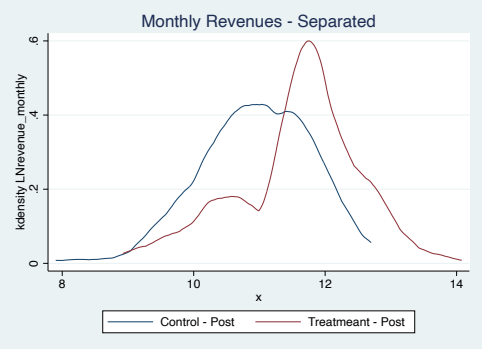


Figure 3a – Post-Treatment Logged Monthly Revenues for Treatment and Control, by Intermingled Status



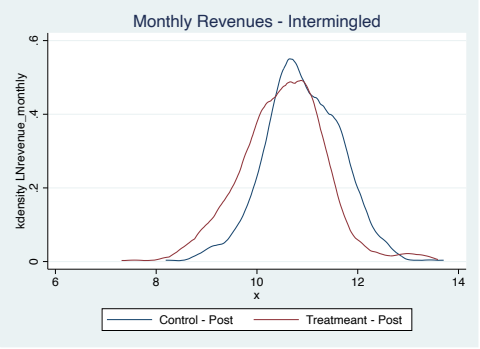


Figure 3b – Hypotheses 1a and 1b

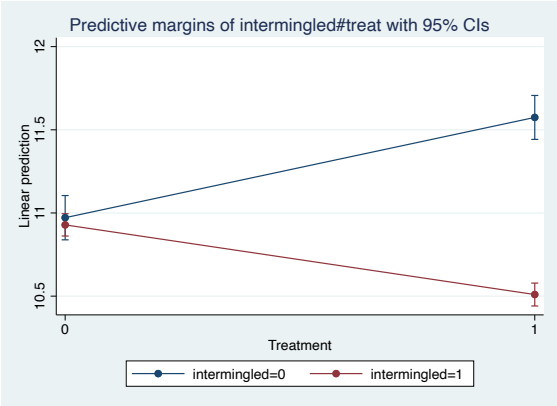


Figure 4 – Mediation Path Diagrams

Figure 4a – Causal Mediation Pathway for Intermingled Firms

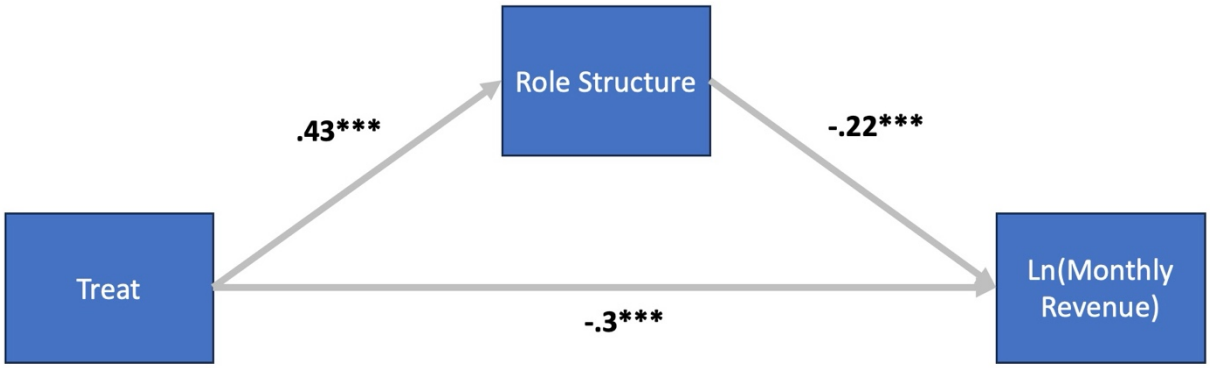


Figure 4b – Causal Mediation Pathway for Separated Firms

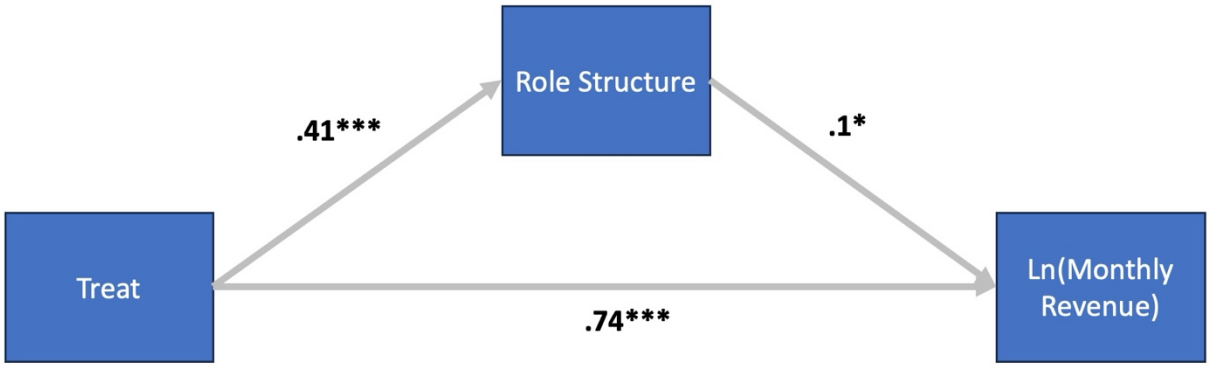
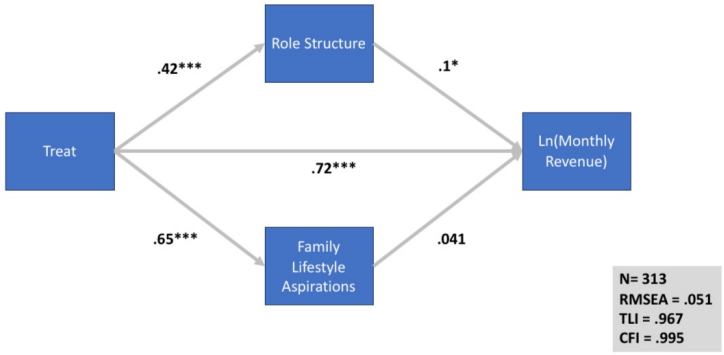
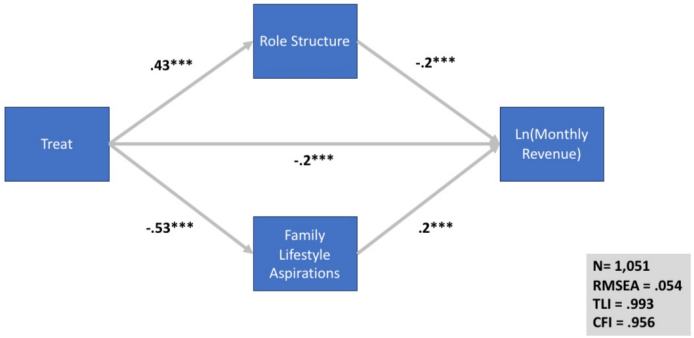


Figure 5 – Mediation Path Diagrams Including "Family Lifestyle Aspirations"

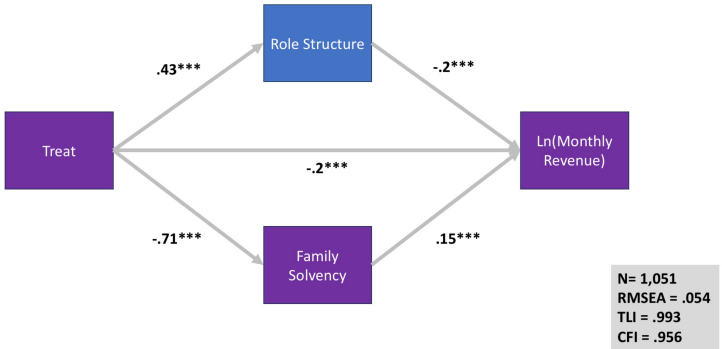
5a - Separated Firms



5b - Intermingled Firms (without orthoganization)



5c – Intermingled Firms (with orthoganization; results reported in text)



APPENDIX III: Assessing Randomization of Treatment

Randomization Check – Conditional Independence Assumption (CIA)

If treatment is truly randomly assigned in our study, then neither the magnitude nor the significance of its coefficients should change in our regressions once covariates are added; this is the logic underlying the conditional independence assumption (Angrist and Pischke, 2009; Washington, 2008). Hence, to assess whether our treatment variable was truly randomly assigned, we may run regressions of various specifications and observe how the coefficient on treatment changes as covariates are added (or does not).

To do this, we run all possible regressions given the baseline covariates available to us. Specifically, we regress logged monthly revenues on our treatment variable and all combinations of coefficients. Doing so yields 22 regressions, an excerpt of which is given in the table below. Notably, the magnitude and significance of the treatment effect are largely unchanged across all 8 models.

	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Training	-.136***	-.148***	-.154***	-.169***	-.166***	-.169***	-.171***
	(.047)	(.046)	(.046)	(.046)	(.046)	(.046)	(.046)
Intermingle		-.618***	-.618***	-.618***	-.617***	-.62***	-.623***
		(.058)	(.058)	(.058)	(.058)	(.058)	(.058)
Founder Sex			.002	.003	.003	.004	.004
			(.002)	(.003)	(.003)	(.003)	(.003)
Firm Age				-.017	-.017	-.017	-.018
				(.012)	(.012)	(.012)	(.012)
Firm Industry ("trade" omitted as baseline)							
Manufacturing					.038	.039	.046
					(.073)	(.074)	(.074)
Services					-.063	-.053	-.035
					(.054)	(.054)	(.055)
Loan Size						.000*	.000
						(.000)	(.000)
Billing Year							.000**
							(.000)
Constant	10.928***	11.399***	11.309***	11.374***	11.397***	11.325***	11.261***
	(.031)	(.058)	(.117)	(.12)	(.124)	(.129)	(.132)
Observations	1401	1401	1401	1401	1401	1401	1401
R-squared	.006	.094	.094	.095	.097	.101	.105

Standard errors are in parentheses
*** $p<.01$, ** $p<.05$, * $p<.1$

We formalize this assessment by conducting a series of pairwise t-tests comparing the coefficients of "treatment" across all models. In particular, we use equations by Clogg, Petovka, and Haritou (1995), which are well-suited for nested models like ours (see also Paternoster et al., 1998). We run 22 regressions which results in a 22x22 matrix of comparisons; we show a subset of them in the table below. These report the t-test of differences in the treatment coefficients between each model (eg. M1 vs M2). The results indicate that none of them are significantly different: the absolute value of the largest t-statistic in the table below is ~.495. In the full 22x22 matrix of results, the largest coefficient is ~.539.

	M1	M2	M3	M4	M5	M6	M7
M1	0	0.16970563	0.25455844	0.46669048	0.42426407	0.46669048	0.49497475
M2	-0.1697056	0	0.08485281	0.29698485	0.25455844	0.29698485	0.32526912
M3	-0.2545584	-0.0848528	0	0.21213203	0.16970563	0.21213203	0.24041631
M4	-0.4666905	-0.2969848	-0.212132	0	-0.0424264	0	0.02828427
M5	-0.4242641	-0.2545584	-0.1697056	0.04242641	0	0.04242641	0.07071068
M6	-0.4666905	-0.2969848	-0.212132	0	-0.0424264	0	0.02828427
M7	-0.4949747	-0.3252691	-0.2404163	-0.0282843	-0.0707107	-0.0282843	0

These results support the claim that randomization was successful in our study (Angrist and Pischke, 2009; Washington, 2008).