

# Family Participation: Giving voice to family members increases entrepreneurial performance

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October 3, 2025

## Abstract

Micro-entrepreneurs often rely extensively on their families. This dependence entails responsibilities: families, including kin not involved in the business, frequently depend on micro-entrepreneurs for financial support. These familial requests for support can limit entrepreneurs' ability to reinvest and grow. While family business research highlights challenges posed by family members in the business, less is known about how entrepreneurs can manage the family members outside the business—such as those who request financial assistance from micro-entrepreneurs. This paper theorizes that structured participation—regular conversations that give external family members voice in business-relevant decisions—can motivate those family members to defer claims, reduce conflict, and ultimately enable entrepreneurs to reinvest and grow their businesses. This theory is tested using a randomized controlled trial (RCT) with 640 micro-entrepreneurs in Lomé, Togo. Entrepreneurs who learned how to give their families voice through three routine practices nearly doubled their business investments and reported 26% higher monthly profits compared to the control group. Mediation analyses suggest these effects were driven by reductions in financial flows to family, increases in family motivation, more trust in family members, and reduced conflict. These findings broaden the study of family business by theorizing a governance approach for managing external family member claims. They also extend research on embeddedness by showing that close family ties do not guarantee effective communication about financial constraints. Simple, structured routines can, however, facilitate the requisite communication to achieve coordination within familial ties and improve micro-entrepreneurial performance.

Keywords: Family participation, micro-entrepreneurship, embeddedness, voice, randomized controlled trial, performance

From the backyard mechanic in Detroit to the tailor in Jakarta, micro-entrepreneurship is a ubiquitous organizational form. Micro-entrepreneurs run small, often unregulated, businesses that employ fewer than five people (Portes and Haller, 2005; Ranganathan, 2018; Dencker et al., 2021; Carlson, 2023). This form of entrepreneurship is especially prevalent in low-income contexts, where alternative forms of employment are often lacking and where micro-entrepreneurship can represent a pathway out of poverty (Aldrich and Ruef, 2018; Pongeluppe, 2024; Raines et al., 2024; Phillips and Ranganathan, 2025).

In low-income settings, micro-entrepreneurs and their families often depend extensively on each other: micro-entrepreneurs rely on family for affordable labor, investments, and advice, while family members rely on micro-entrepreneurs for financial support (Aldrich and Cliff, 2003; Dahl and Sorenson, 2009; Ruef, 2020). This embeddedness in families leads to a documented tension: familial ties are trusted sources of support yet also entail responsibilities that can run against business goals (Coleman, 1990; Portes and Sensenbrenner, 1993; Portes, 2014). For micro-entrepreneurs, these responsibilities frequently involve providing financial assistance to family members who are not part of the firm (Geertz, 1956; Stack, 1974; Peterson, 1993; Peng, 2004; George et al., 2016). This creates *cross-domain financial flows*, funds that are transferred from the business domain to the family domain. These flows are challenging to manage because, while they impede business growth, refusing familial requests risks damaging those relationships and even ostracizing micro-entrepreneurs from their families (Portes, 1998; Fafchamps, 2011).

Family business research has extensively explored tensions that arise at the intersection of family and business (Morck and Yeung, 2003; Schulze, Lubatkin, and Dino, 2003b; Villalonga et al., 2015). Much of this research has emphasized challenges that emerge from family members within the business (Li and Piezunka, 2023). For example, family ownership can lead to the hiring of unqualified relatives, creating a culture of nepotism and entrenchment (Morck, Wolfenzon, and Yeung, 2005; Jeong, Kim, and Kim, 2022). Similarly, executives who are family members can funnel profits to ventures where they have more control or find other means of expropriating non-family owners and investors (Faccio, Lang, and Young, 2001; Bertrand et al., 2008; Stewart and Hitt, 2012). These and related challenges tend to arise from family members with formal roles or ownership stakes in the business. In the case of micro-entrepreneurs, however, requests to share business revenues also come from relatives without any involvement the business, creating a different kind of tension.

This presents a puzzle for organization scholars: how can entrepreneurs manage claims-making family members outside the business? If these family members were employees, entrepreneurs could create incentive pay systems or use contracts to limit their claims (Gomez-Mejia, Larrazza-Kintana, and Makri, 2003; Croci, Gonenc, and Ozkan, 2012). Alternatively, entrepreneurs could motivate them to become stewards of the business by giving them more responsibility in the business or a larger ownership stake (Eddleston and Kellermanns, 2007; Le Breton-Miller, Miller, and Lester, 2011; Neckebrouck, Schulze, and Zellweger, 2018). Family business research has identified a variety of such interventions and mechanisms to mitigate risks associated with family

involvement (Bennedsen, Gonzalez, and Wolfenzon, 2010; Gersick and Feliu, 2014). Yet, these mechanisms generally assume that family members hold positions in the business, whether as employees, investors, or owners. By contrast, cross-domain financial flows for micro-entrepreneurs often involve family members outside the business. Recent advances in the study of multiplexity and family business highlight that such external family members can have significant influence over family businesses (Li and Piezunka, 2020; 2023). In the case of micro-entrepreneurs, external family members can create cross-domain financial flows that are so large as to stunt business growth and even lead to failure (Jakiela and Ozier, 2016; Squires, 2024). Yet, it remains unclear how micro-entrepreneurs can manage these cross-domain flows to enable business growth while also preserving familial ties.

This study builds on a long tradition of research on participatory management (Lewin, 1947; Argyris, 1955; March and Simon, 1958; Pateman, 1975; Latham and Yukl, 1976; Ichniowski and Shaw, 1999), which suggests that participation can be a motivational force for behavior change and cooperation (Locke and Latham, 2002; Karpowitz, Raphael, and Hammond, 2009). While the effects of participation have primarily been studied in the context of workers within organizations (Wagner III and LePine, 1999; Lee and Edmondson, 2017; Battilana, Beckman, and Yen, 2025), I argue that the underlying mechanisms also apply to external stakeholders, such as family members without roles in the business. In particular, I argue that when micro-entrepreneurs have conversations with family members—including those without positions in the business—about the business' finances and give family members an opportunity to exercise voice by sharing their views, this increases family members' motivation to support the business, strengthens trust, and reduces conflict. This, in turn, increases families' willingness to defer claims in order to support reinvestments. The increased support, trust, and reinvestment enables micro-entrepreneurs to improve their business performance.

To test this theory, I conducted a randomized controlled trial (RCT) with 640 micro-entrepreneurs in Togo. The treatment condition in the RCT taught micro-entrepreneurs *family participation*--a structured monthly set of conversations on budget, investment, and feedback--that gives all family members meaningful opportunities to express their views and give input in business-relevant decisions. The control condition taught micro-entrepreneurs a set of well-studied and closely related business practices in the areas of accounting, stock management, and marketing.

In line with the theory, the family participation training led to nearly twice as much investment in micro-enterprises and increased profitability by 26% compared to the control group, nine months after the training. Giving family members voice motivated them to support the business and increased trust. This was associated with greater willingness to defer claims and reductions in conflict. All of this allowed micro-entrepreneurs to reinvest and grow their businesses. Importantly, the data also suggest that families benefited financially from these changes, since the absolute amount of money they received from micro-entrepreneurs by the end of the study was higher than the control group.

This study broadens our understanding of family business by exploring the influence of external family members—those without roles in the business—and developing an approach to balance the competing demands they create. In doing so, this study also extends research on participation and voice, showing that there can be value in giving voice not only to internal stakeholders--e.g. workers--but also to external stakeholders. Furthermore, through a theoretically informed intervention, this study extends research on entrepreneurial training by showing that entrepreneurs can learn to manage their familial relationships to the benefit of their businesses and their families. Finally, this study has implications for our understanding of family embeddedness: just because familial ties are close and trusted does not necessarily imply effective communication about business constraints. Rather, this study shows that simple, routinized practices may be needed for effective communication, even within close, familial ties.

## **THEORY**

### **Micro-Enterprises as Family Businesses**

Micro-enterprises are small, informal businesses that typically employ fewer than five people (Godfrey, 2011; Dencker et al., 2021; Carlson, 2023; Nason and Bothello, 2023). These businesses are not registered with the authorities, not regulated, and do not pay taxes (Portes and Haller, 2005; Webb et al., 2009). Since they operate in the shadow economy, they do not have legal recourse and cannot rely on contracts. Work arrangements tend therefore to be flexible and ad-hoc, with limited hierarchies and few well-defined roles (Bennett, 1958). Instead, micro-enterprises rely on trusted relationships to conduct business (Centeno and Portes, 2006). They depend on people with whom they share close ties for labor, supplies, and sales (Greif, 1993). This form of business is, as a result, deeply embedded in networks of close ties.

Among the relationships that micro-entrepreneurs rely on, their relationships to kin are particularly central. Family members provide initial capital investments that enable basic start-up activities (Khavul, Bruton, and Wood, 2009; Ruef, 2010). They also provide labor by working in the business and helping out with daily operations (Ruef, 2020). Micro-enterprises frequently share physical space with family by operating from household premises (Doering and Liu, 2019). Front lawns and windows serve as retail spaces, while backyards and sheds are transformed into production areas (Webb et al., 2013). Micro-entrepreneurs learn from other family members how to manage and operate their businesses (Zahra, 2012). Accounts of micro-entrepreneurship often describe how micro-entrepreneurs learn the skill they market from older generations (Dyer Jr and Handler, 1994; Ruef, Aldrich, and Carter, 2003). Family ties also facilitate customer referrals, which are particularly important in markets where there are significant information frictions (Peng, 2004). Finally, considerable research suggests that extended family networks serve as informal insurance mechanisms, offering financial support during economic shocks and business downturns (Fafchamps and Gubert, 2007; George et al., 2016). Family relationships are therefore critical sources of support to many micro-entrepreneurs.

While family is often central to micro-enterprises, this form of business has not been emphasized in research on family business (Gomez-Mejia et al., 2020). This may be due to the fact that definitions of family business vary, with some excluding owner-founded businesses, which would also exclude most micro-enterprises (Villalonga and Amit, 2020). Yet, more inclusive definitions of family business define them as those in which a family owner exercises influence over the firm (Gomez-Mejia et al., 2011), which would include most micro-enterprises in which a founder runs the business and whose family likely has considerable influence over the business. Adopting this definition, micro-enterprises can often be thought of as family businesses, even though there is typically only one owner and due to their small size they often employ only a very limited number of family members.

### **Family Embeddedness and Cross-Domain Financial Flows**

While micro-entrepreneurs often depend on family members, family members also frequently depend on them for financial support, creating deep familial embeddedness (Aldrich and Cliff, 2003; Ingram and Lifschitz, 2006). Compared to research on family business, the literature on embeddedness and multiplexity emphasizes that entrepreneurs are not just embedded in familial relationships within the business domain, but also in family ties that are restricted to the family domain (Granovetter, 1985; Bird and Zellweger, 2018; Li and Piezunka, 2020; Burt, Oppen, and Zou, 2021; Aldrich et al., 2023). In other words, familial relationships that are important and influential for micro-entrepreneurs are not always multiplex. Some influential family members are not involved in the business, they are just family members. These family members are external to the business, do not hold a role or position in it, and represent what Li and Piezunka (2020; 2023) refer to as uniplex or "submerged" family members. While these relationships may be external to the business, they can still impact micro-entrepreneurs' business performance.

In particular, embeddedness in both multiplex and uniplex familial ties can transpose obligations from the household domain into the business domain. Micro-entrepreneurs embedded in their families are expected to support family members in need, regardless of whether those family members are involved in the firm. Particularly in low-income settings, micro-entrepreneurs may be one of few sources of income for a family, which can create expectations that they provide financial assistance to family members (Banfield, 1958; Platteau, 2000). This produces cross-domain financial flows, from the business to the family domain, that are episodic, uncoordinated, and difficult to decline.

These requests made of entrepreneurs by their kin have long been documented. An early account dates to Weber (1930 [1904]), who argued that individuals' responsibilities towards their families constrains their ability to pursue entrepreneurship and used this argument to describe obligations to support kin as a "fetter" on entrepreneurship (Whyte, 1996). In his classic ethnography of a Balinese village, Geertz (1956) described how an entrepreneur was besought by kin to employ family members, so much so that his business failed. Similarly, Lewis (1956) writes about

successful entrepreneurs being "besieged by correspondingly increased demands for support from a large number of distant relations" (p. 114). In their study of Cameroonian micro-entrepreneurs, Baland et al. (2011) highlight the frequency of these requests by quoting an entrepreneur who said "Every time they know I have money, they come with new demands" (p. 9). Olie's (2023) study provides compelling qualitative descriptions of the feeling of obligation to meet these requests for support, he quotes a micro-entrepreneur in Cote d'Ivoire as saying "It's very difficult to tell them no, to the point where you feel like if helping them does not take precedence over some of your non-urgent expenditure, any misfortune that would befall them will haunt you for the rest of your life." (p. 35). Studies across a broad range of African contexts estimate that cross-domain financial flows account for 9-17% of micro-entrepreneurs' revenues (Jakiela and Ozier, 2016; Boltz, Marazyan, and Villar, 2019; Olié, 2023; Squires, 2024).

Cross-domain financial flows can be difficult to manage because they are often episodic and uncoordinated among family members. Micro-entrepreneurs often do not know which family member will need their support and when (Di Falco and Bulte, 2011). Moreover, claims and requests are typically uncoordinated between family members (Luke and Munshi, 2006). As a result, they can add up in ways that drain savings from the business, impeding micro-entrepreneurs' ability to reinvest (Grimm, Hartwig, and Lay, 2017; Riley, 2024). Families can therefore unintentionally over-claim business income, restricting entrepreneurs' ability to reinvest or even maintain inventory, all of which constrains micro-entrepreneurial performance and can lead to business failure (Vollan et al., 2023; Squires, 2024).

Besides being episodic and uncoordinated, cross-domain financial flows are also difficult to manage because turning away family members or questioning their requests risks damaging the relationship and causing reputational harm. Micro-entrepreneurs who decline to support family members can be seen as transgressive by family members, who in turn can withdraw their support (Bertrand and Schoar, 2006). Given how central family support can be in low-income settings, this can be a severe cost for many micro-entrepreneurs. Moreover, micro-entrepreneurs' reputations in their communities may suffer if they become known as unsupportive of their families (Peterson, 1993; Portes, 1998; Platteau, 2000). This suggests that cross-domain financial flows are difficult for micro-entrepreneurs to stem unilaterally.

Moreover, recent research on close ties suggests that micro-entrepreneurs could be averse to even broaching the issue of cross-domain financial flows with family members. This research finds that, contrary to classic theories of embeddedness, many people do not confide in or discuss important issues with close ties, such as friends or family (Brashears and Quintane, 2018; Small, Brant, and Fekete, 2024). Older theories of relational closeness assumed that because close ties are often more supportive, people would be likelier to share information with them and discuss important issues (Granovetter, 1973; Marsden, 1987; Krackhardt, 2003). Yet, people often avoid discussing important issues, particularly financial distress, with family because they can be perceived as ambivalent or difficult, and because their opinions matter more (Small, 2017; Offer and Fischer, 2018). For micro-entrepreneurs, this suggests that conversations about the challenges that cross-

domain financial flows create may not happen automatically—despite micro-entrepreneurs sharing close ties with their families.

### **Family Business Governance and External Family Members**

The family business literature has explored a wide range of tensions and risks that arise when family members are involved in businesses. This research, however, has placed comparatively less emphasis on issues that arise from family members who are external to the business (Li and Piezunka, 2023). Family business research has therefore emphasized issues like expropriation of non-family investors, nepotism, and entrenchment, among others (Morck and Yeung, 2004; Gomez-Mejia et al., 2011). In larger family businesses, families can expropriate investors by transferring funds to units where they maintain greater control (Morck and Yeung, 2003; Villalonga et al., 2015). Family involvement can lead to nepotism when employment decisions favor family members regardless of competence (Gagliarducci and Manacorda, 2020). Such involvement can also lead to entrenchment, whereby family members, especially heirs, remain in leadership positions despite poor performance (Morck, Wolfenzon, and Yeung, 2005). In all these cases, opportunistic behavior is exhibited by family members who hold positions or have some direct involvement in the firm.

Building on these insights, the literature on family business has also identified mechanisms and interventions that can mitigate risks associated with the presence of family members in the business. For example, creating diverse boards of directors can improve the monitoring of family members who are managers and executives, reducing nepotism and entrenchment (Anderson and Reeb, 2004). Legal protections for non-family investors can help reduce the risk of family members tunneling and expropriating assets (Maury, 2006; Enriques and Volpin, 2007). Similarly, executive compensation structures can mitigate agency problems with family members in leadership positions (Gomez-Mejia, Larraza-Kintana, and Makri, 2003; Schulze, Lubatkin, and Dino, 2003b). Dispersed ownership structures can similarly mitigate agency costs in family firms (Schulze, Lubatkin, and Dino, 2003a). While research on these governance mechanisms has shed light on how to mitigate familial conflict and agency problems, it generally assumes the relevant family members hold roles in the business or have some form of direct involvement.

Yet, unlike the common family-business problems detailed above, cross-domain financial flows are often driven, at least in part, by claims made by relatives without roles in the micro-enterprise. As micro-enterprises tend to have few, if any, employees, they tend not to directly involve most family members. As a result, the usual governance levers detailed above—boards, incentive contracts, legal protections, ownership structures—are of limited applicability. When claims-making family members are not part of the organization, many of the mitigating mechanisms described in the family business literature are likely not relevant.

Besides governance mechanisms, research on family business has also explored how stewardship can be associated with fewer family tensions and less opportunistic behavior by family members (Madison et al., 2016). This approach argues that family insiders, particularly owners or managers, will voluntarily act in the family firm's best interest due to intrinsic pro-organizational motives when they come to identify with the business (Miller and Le Breton-Miller, 2006; Eddleston, Kellermanns, and Zellweger, 2012; Neckebrouck, Schulze, and Zellweger, 2018). Building on this perspective, family business research has argued that when family members are given elevated roles within the business, greater ownership stakes, or more authority over strategic decisions, they are likelier to see the business as an extension of the family and an inheritance for future generations, thereby motivating them to become stewards of the business (Eddleston and Kellermanns, 2007; Le Breton-Miller and Miller, 2009). These outcomes, however, are contingent on the business not being over-embedded in the family (Le Breton-Miller, Miller, and Lester, 2011), the firm having an altruistic culture (Eddleston and Kellermanns, 2007), and family members having explicit roles in the business (Miller, Le Breton-Miller, and Scholnick, 2008). They are also contingent on the family business being able to accommodate family members within the boundaries of the firm, either through ownership or formal roles.

Micro-enterprises, due to their limited capacities, cannot employ most claims-making relatives. Similarly, as they are not legal entities, it may be hard for them to share ownership with family members. Furthermore, in the contexts where micro-entrepreneurs work, giving more ownership or direct authority over business decisions to family members could lead to identification, but it could also potentially lead to more expropriation and even more claims on the business. This may be especially the case for external family members, whose jobs or positions are not contingent on the business' survival. Applying a stewardship approach, therefore, could make it even more difficult for micro-entrepreneurs to manage external family members. Given this, it is unclear how to leverage the insights described in family business research in micro-enterprises.

## **Family Participation**

While micro-entrepreneurs may not be able to employ claims-making relatives or give them more authority within the business, I argue that a different approach to can be pursued using insights from participatory management theory. Research on participatory management suggests that opportunities to exercise voice can be powerful catalysts for cooperation (Latham and Steele, 1983; Locke and Latham, 2002; Tyler and Blader, 2003; Karpowitz, Raphael, and Hammond, 2009). Participatory routines can create structured opportunities for all family members, including external family members, to express their views on cross-domain financial flows. Exercising voice empowers family members to share their views, without micro-entrepreneurs seeding control over their business decisions. As a result, family members feel motivated to support the business and are likelier to defer some of their claims, while micro-entrepreneurs are also better able to express

their financial constraints, leading to a more balanced management of cross-domain financial flows.

Participatory management theory originated in the 1950s based on the idea that workers would be more productive when given the opportunity to express their views in decisions that affect their work (Argyris, 1955; March and Simon, 1958; Hofstede, 1968). Participation, it was argued, could give workers voice, empowering them and create a sense that decisions were fair and legitimate (Tyler and Blader, 2003; Price et al., 2006). This, in turn, would motivate workers to be more productive (Latham, Steele, and Saari, 1982; Wagner III and LePine, 1999). It was also argued that by creating structured opportunities for workers to express voice, it could contribute to building trust between workers and managers, reducing conflict (Locke, Schweiger, and Latham, 1986; Boca et al., 2018).

Participation in decision-making can manifest in many different forms within organizations. It can vary in terms of its strength, ranging from consultative voice, in which managers discuss worker's suggestions and ideas without any commitment to implementing them, to formally guaranteed participation, in which worker representatives sit on boards of directors (Jäger, Schoefer, and Heining, 2021). Similarly, participation can vary in terms of the scope of decisions. Decisions can be about local, short-term issues or they can relate to the organization's overall strategy (Lee and Edmondson, 2017). Finally, participation can be direct, in the form of individuals voicing their own perspectives, or indirect, when workers elect their own proxies through elections (Battilana, Beckman, and Yen, 2025).

A form of participation that is likely well-suited to micro-entrepreneurs and their external family members is direct, consultative voice on substantive decisions. This encompasses forms of participation in which individuals express their views themselves, but these views are consultative and not binding. Nevertheless, these views are expressed on substantive decisions that likely affect them. When workers express their views directly in decisions that are likely to have an impact on the organization, but that are not binding, it leads to improvements in motivation, perspective taking, productivity (Locke and Latham, 2002; Boca et al., 2018; Kowalski et al., 2025; Wu and Paluck, 2025). This research documents that voice, even if it is not a commitment to implementing workers' perspectives, can be a powerful motivating force to cooperate with management and increase productivity (Latham, Steele, and Saari, 1982; Tyler and Blader, 2003; Price et al., 2006).

Although this theory has been articulated in terms of giving voice to internal stakeholders—especially workers—I argue that the underlying mechanisms likely generalize to external family members. Participation motivates by empowering individuals through voice—an opportunity to express their point of view—and the ability to observe how decisions are made and under what constraints, which creates a sense of procedural justice and understanding (Lind and Tyler, 1988; Tyler and Blader, 2003). Theoretically, these processes could also be activated with external stakeholders. When given the opportunity to voice their perspective and observe decision-making processes, external stakeholders should similarly feel empowered and better able to understand the

decision-maker's perspective (in this case the micro-entrepreneur's). This should lead to similar reductions in conflict and improvements in motivation to support the business. At the same time, this form of participation should insulate decision-makers from over-involvement of external stakeholders. Giving voice to external family members is not a commitment to adopt their suggestions or implement all their ideas. As a result, a direct but consultative approach to participation gives external family members voice, without relinquishing entrepreneurs' power over the final decision.

Adapting the idea of participation to micro-entrepreneurs' external family members, I define *family participation* as routines that create regular opportunities for all family members, both internal and external to the business, to express their views in a consultative but not binding way on cross-domain financial flows. I further define three routines through which this participation can occur, which have been previously studied in the participation literature: participatory budgeting, resource allocation decisions, and feedback.

Participatory budgeting with family members involves crafting a family budget. This is a budget of the family's income and anticipated expenses over a defined period of time. Inviting family members to participate in the crafting of a family budget enables family members to speak about their needs and expectations, while entrepreneurs also have the opportunity to explain the business' financial situation and prospects. Budgets have commonly been used as opportunities to give voice to organization members (Shields and Shields, 1998; Baiocchi and Ganuza, 2014). Evidence suggests that participating in budgetary discussions creates a greater sense of commitment and motivation for those participating (Brownell and McInnes, 1986; Gonçalves, 2014; Gherghina, Tap, and Soare, 2023; Wu et al., 2024).

The second participatory routine for family members involves decisions about resource allocation, which in the case of family members involves discussing investments in the micro-enterprise. During these discussions entrepreneurs have the opportunity to explain the trade-offs between short-term family claims and future returns. At the same time, household members can express their views on these trade-offs and their preferences in terms of timing and scale. Studies of participatory management suggest that giving employees voice over investments can direct those investments to areas where they are most needed and motivate employees to support their implementation, thereby increasing their returns (Askildsen, Jirjahn, and Smith, 2006; Addison et al., 2007; Jäger, Noy, and Schoefer, 2022).

Finally, including family members in rounds of feedback gives them an opportunity to react to business outcomes and processes, as well as express views on the overall business direction. This form of voice has been extensively studied (Ichniowski and Shaw, 1999; Smither, London, and Reilly, 2005; Detert and Burris, 2007). This research suggests that even the opportunity to express their views increases employees' job satisfaction, motivation, and productivity, while reducing turnover (Kowalski et al., 2025; Wu and Paluck, 2025).

## **Family Participation, Investments, and Profits**

I argue that family participation will improve micro-entrepreneurs' ability to manage cross-domain financial flows, thereby improving their ability to invest in their businesses. In particular, adopting routines that give voice to micro-entrepreneurs' family members, especially those without roles or positions in the business, should increase family members' motivation to support the business (Wu and Paluck, 2025). Evidence suggests that voice is empowering and can be a strong motivational experience (Latham and Steele, 1983; Tyler, 2006; Wu and Paluck, 2020). If family members are more motivated to support the business, they might be more willing to defer consumption and reduce their short-term requests to allow for more investments.

At the same time, routines for family participation should also create more regular and structured interactions between entrepreneurs and external family members. In addition to giving voice, this may also help micro-entrepreneurs get to know these family members better and, as a result, trust them more (Holland et al., 2012; Kwon and Kim, 2025). The increased trust between micro-entrepreneurs and their family members may also contribute to family members being more willing to accept short-term reductions in consumption in order to finance investments.

Finally, the family participation routines should enable family members to gain a better understanding of how the business works and take entrepreneurs' perspective, thereby reducing the number of disagreements and conflict (Bunderson and Reagans, 2011; Greer, Van Bunderen, and Yu, 2017; Van Gramberg et al., 2020). The reduced conflict could enable micro-entrepreneurs and family members to have better discussions and identify more opportunities to invest in the micro-enterprise.

The combination of higher family member motivation, increased trust, and reduced conflict, should increase opportunities for micro-entrepreneurs to communicate opportunities for investment and gain the support of family members for those investments. This should reduce the cross-domain financial flows into the family domain, thereby enabling entrepreneurs to reinvest more in the business. Therefore, I pre-registered the following hypothesis:

**Hypothesis 1:** A participatory approach to family increases entrepreneurs' investments in their businesses.

In addition to increasing investment, family participation should also increase micro-entrepreneurs' profitability. The increase in investment should enable micro-entrepreneurs to improve production systems, hire additional help, buy more inventory, or take a variety of strategic actions that improve the quality of their products or reduce costs, all of which should enable them to outperform their competitors and increase profits (Eisenmann, 2006; Sirmon and Hitt, 2009; Anderson and McKenzie, 2022).

Beyond impacting profits through investments, family participation should also increase profits through increases in family members' motivation and trust, and reductions in conflict. More specifically, family participation should increase family members' motivation to support the

business, which could lead to them providing more psychological support and encouragement, more referrals, and even helping out more around the business, all which could help improve performance (Tyler and Blader, 2003; Detert and Burris, 2007; Ruef, 2010; Wu and Paluck, 2020).

Similarly, if micro-entrepreneurs trust their family members more, this might improve communication, it might enable them to ask for more favors, and rely on them for more support, all which can help improve performance (Aldrich and Cliff, 2003; Burris, 2012). Finally, reductions in conflict should enable micro-entrepreneurs to focus their time on the management of their business and reduce distractions, which should also lead to improvements in performance (Wagner III and LePine, 1999; Price et al., 2006; Greer, Van Bunderen, and Yu, 2017; Harju, Jäger, and Schoefer, 2025). Taken together, family participation should improve business performance through investments, increased motivation and trust, as well as reduced conflict. Therefore, I pre-registered the following hypothesis:

**Hypothesis 2:** A participatory approach to family increases entrepreneurs' financial performance.

## RESEARCH DESIGN

Setting: Lomé, Togo

The setting for this study was Lomé, the capital of Togo. Togo is a lower-income country in West Africa, with an approximate annual income per capita of \$1,000 USD in 2023 and a poverty rate of approximately 42.4% (World Bank, 2024). Togo experienced steady economic growth between 2017 and 2024, averaging 4.7 percent GDP growth (World Bank, 2020). These conditions created numerous business opportunities for entrepreneurs, especially in Lomé, where the government made significant infrastructure investments (U.S. Department of State, 2023).

Lomé was an appropriate setting for this study because kinship is a prevalent social institution in local ethnic groups and, as a result, family is often involved in entrepreneurial ventures. In this social institution, family members are expected to support each other. The two most economically significant ethnic groups in Lomé are the Ewe and Kabye (UN CERD, 2008). The Ewe are the numeric majority in Lomé, since the city is located in their ancestral lands (Minority Rights Group, 2018). The Kabye ethnic group also has a significant presence in Lomé as they are overrepresented in the Togolese government, even though their ancestral lands are located to the north, near the Kara region (Minority Rights Group, 2018).

In both these ethnic groups, kin-based ties are close, entailing significant contact and emotional closeness (Kludze, 1969; Fiawoo, 1974). According to traditions dating to pre-colonial times, members of a kin group in both ethnic groups are expected to support each other. Among the Ewe, members of a kin group were traditionally responsible for each other's debts, were prohibited from suing each other or giving evidence against each other during a trial (Manoukian, 1952). According to Westermann (1935), Ewe "members of a lineage are bound to mutual assistance." Similar

expectations are described among the Kabye, for whom kin groups are led by the most senior member, who is responsible for managing the farmland owned by kin and ensuring that all members of the kin group are supported. Given this responsibility, Kabye kin group leaders would traditionally spend time consulting with other members about the management of kin property (Manoukian, 1951:66).

In preparation for this study, twelve exploratory interviews were conducted with a convenience sample of business owners in Lomé in 2021. The interviews were conducted by the author in French with entrepreneurs who were referred by a Togolese non-profit organization. Interviews lasted between 30 and 60 minutes. During the interviews, entrepreneurs described how their families were often a source of support, as well as a source of requests and, at times, interference. One business owner described how he relied extensively on family members to operate his business:

"I'd say family plays an important role. First, my mother supports me, she advises me. With her I discuss, I exchange ideas. She also gives me guarantees for microfinance institution loans, for banks loans. My uncle too, who's a partner [in the business] but who also often guarantees me with financing institutions. He's a manager by training, so he also gives me advice from time to time when I need it. My wife, helps me a lot with the running of the business, because I don't have the time. She's the one who does the accounts and all that." (Ismael, 8)

Another entrepreneur emphasized the supporting role of family through financial contributions and referrals:

"Family, you could say parents, can give you money to develop your business. In my case, it's not like they gave me an amount, but they took care of my rent. And they send customers. They say: "Look, this person does this, it's my daughter!" (Essy, 4)

Yet, entrepreneurs also lamented the challenges that family members, including those without specific roles in the business, could create when they claimed inventory or expropriated funds. One Ewe entrepreneur in Lomé highlighted the risk of giving to family members:

"Speaking of family, if you give a family member some of your merchandise and they do not pay you, what are you going to do? You know each other well, you grew up together, you can't take them to court or sue them. It's very hard to trust family members in business." (Kodjo, p2)

Similarly, another entrepreneur emphasized the interference and pressure that can occur:

"They think that the company belongs to them alone, so they can do whatever they want, and that kills a company." (Siakou; p7)

Another business owner emphasized how household members might not understand the business or what entrepreneurship entails:

“If you're not careful, sometimes the family puts the brakes on your project. They put a strain on your projects. Your family doesn't necessarily support you. If you have psychological support from your mom or dad, that's great, but that's where it ends. They [family] don't see you as an entrepreneur, they don't even understand what it is.” (Ayeva; p.3)

These quotes illustrate that for entrepreneurs in Lomé family is often intermingled with business and can be experienced as both a source of support and a liability. These quotes therefore suggest that Lomé was a suitable setting to test the impact of family participation.

## **Experimental Design**

This study's hypotheses were tested using a randomized control trial, which was implemented through a collaboration with the non-governmental and non-profit organization, Energy Generation. The social mission of this organization is to promote entrepreneurship in Togo. As a result, they regularly organize training programs for entrepreneurs and in 2023 they assisted with putting in place a training program for this study. They helped provide space for the training and hire experienced instructors. Prior field experimental research suggests that intensive training programs like this can be effective at conveying new ideas and teaching business practices that entrepreneurs go on to implement (McKenzie and Woodruff, 2014).

The training program recruited participants from across the city of Lomé. Recruitment of participants was done through door-to-door canvassing by a team of three research assistants, who were local university students. These research assistants were trained by the study's author about how to approach business owners and discuss the training program with them. They were instructed to canvass each neighborhood in Lomé beginning from the main commercial roads in each neighborhood and to approach every business operating on that road, after which they should approach businesses on roads emanating from that main street. When approaching a business, they were instructed to speak to the owner and provide a description of the training in general terms as being about improving management, without providing specific details about the topics covered. As a result, prospective participants signed up for the training without knowing that there were two kinds of trainings or which training they would receive. In order to participate in the training, entrepreneurs were required to own their business and have been in operation for at least one year. Recruiters verified that prospective participants met these criteria. As part of the registration process, they also collected information about the entrepreneur's business neighborhood, phone number, and industry. Over the course of three months, from March to June of 2023, the team of canvassers recruited 827 eligible participants, who signed up to take the training program. The training was offered for free and entrepreneurs could request a reimbursement of travel expenses of \$2 USD at the end of the training program.

The training for both the treatment and control groups lasted two days, which were taught consecutively. Each participant, therefore, committed to attending on both days when they signed up and were assigned to specific dates. Dates for the training were filled sequentially: the first 50 entrepreneurs to sign up were assigned to the first cohort on July 3rd and 4th, the second 50 were assigned to the class on July 5th and 6th, and so on until all 24 cohorts were filled. The training dates began in early July and ended at the end of August. Training sessions were held in three different communities in Lomé (Totsi, Hedzranawe, and Adetikope) and entrepreneurs were assigned to take the training in the community nearest to them. After all cohorts had been filled, half the cohorts in each of the three communities were randomly selected to follow the family participation training and the other half to follow the conventional business practices training. Hence, half the training cohorts in the Totsi training location were randomly selected for the treatment condition and the other half in Totsi were assigned to the control condition. The same process was followed for the two remaining locations. As pre-registered, the randomization was done within each community (i.e. location of training), thereby stratifying the randomization by community. The level of randomization was the training group (cohorts), rather than entrepreneurs. To conduct the randomization I used Excel, creating rows for each training cohort and generating a random number for each row, then sorting them within each neighborhood and selecting the first half into the treatment condition.

The key advantage of this approach to randomization was its practicality. Training and educational interventions naturally take place in cohorts. It was simpler to schedule the training sessions and allow participants to select their dates, thereby increasing compliance and reducing attrition, rather than assigning them to dates. This approach also made it easier to ensure that the same team of trainers taught all the cohorts, since no training programs took place at the same time, which eliminated concerns that trainer quality might be driving the experimental effects.

A disadvantage of this approach, however, is that randomizing at the cluster level can lead to intra-cluster correlation, which reduces the effective sample size and, by extension, the experiment's statistical power (Eldridge, Ashby, and Kerry, 2006). Since all entrepreneurs within the same cohort are exposed to the same instructional conditions or the kinds of questions their peers ask during class, the ability to learn is likely correlated within clusters. The conventional way of dealing with this is to cluster standard errors at the level of randomization, which in this case is the cohort of entrepreneurs (Abadie et al., 2023). All regression analyses in this study cluster standard errors at the training cohort level. Moreover, this study's pre-registration accounted for the clustered nature of the randomization and included this assumption in power calculations, which estimated that a minimum of 400 participants and 20 clusters would be needed to detect treatment effect sizes of 7.5% or more. Post-hoc minimum detectable effect calculations show that with the sample of 593 entrepreneurs and 24 clusters, the regressions are adequately powered to detect effect sizes of 25% or more, Appendix 13 provides more information on these power calculations.

It is worth noting that intra-cluster correlation occurs within any experimental design in which participants are exposed to the treatment in groups (Pals et al., 2008). Any experiment involving training is therefore likely to exhibit intra-cluster correlation, even if the randomization occurs at the individual level (Murray, 1997; Karlan and Valdivia, 2011). Given this, randomizing at the individual level would not have eliminated the issue of intra-cluster correlation.

The section on Data presents the balance table (Table 4) which shows that there are no statistically significant differences between the control and treatment groups on observable characteristics at baseline. Besides the differences not being statistically significant, the magnitude of differences is also relatively small. This suggests that even with the randomization occurring at the training cohort level it was successful and created a balanced sample on all observable characteristics.

Of the 827 entrepreneurs who originally signed up for the training 640 showed up on the first day of classes for their cohort. Since not all entrepreneurs who signed up for the training attended, it led to some variation in cohort sizes, with the smaller cohorts having 8 entrepreneurs and the larger ones about 50. The attrition between the registration and attendance was balanced across treatment and control conditions, and attendance rates were similar across conditions (Appendix 8 presents the regressions). Given that micro-entrepreneurs were not aware that there were two different training programs it is not surprising that the content of the training did not correlate with attrition. As a result, it is unlikely that this attrition led to any biases in the treatment effect estimates. This experimental design identifies treatment estimates that represent the “treatment-on-treated” effect or the “per-protocol” effect, rather than the “intention-to-treat” estimates.

All 640 entrepreneurs who attended the first day of training completed both days of the training program. There was no attrition during the training program. Several factors account for this lack of attrition during the training. First, the training was scheduled during a condensed amount of time and was intensive. Second, entrepreneurs committed ahead of time to complete the entire training and were not allowed to join a class late or on the second day. Third, on the first day of training entrepreneurs were told that class would not begin on the following day until everyone had arrived, which created a social incentive for participants to return the following day on time. Fourth, women entrepreneurs were allowed to bring their children with them to the training, to ensure that childcare was not a reason for missing the training. Fifth, entrepreneurs in both the control and treatment conditions reported high levels of satisfaction with the training. It is therefore likely that the training kept them engaged and motivated to complete it. In an exit survey after the end of the second day of training, 98% of entrepreneurs in both the treatment and control conditions reported they had found the training to be either “extremely useful” or “very useful.” In the same exit survey, 92% of entrepreneurs in both the treatment and control groups reported they would take another similar training program if it were offered in the future. This high level of satisfaction may explain why there was no attrition.

The cohorts were taught sequentially, rather than simultaneously, to maintain the same team of instructors in all classes. The team of instructors consisted of three management consultants who

had previously taught entrepreneurship programs at local universities and in international development programs, each with multiple years of experience. The program was taught simultaneously in French and in Ewe. These training days were intensive, lasting 10 hours each, for a total of 20 hours of training for each participant.

This experimental design did not include a “pure” control group that receives no training. The advantage of this design is that it creates a conservative control group, because many RCTs have shown that training micro-entrepreneurs on business practices improves performance (McKenzie, 2021; McKenzie et al., 2021). This literature shows that on average these kinds of training programs increase the adoption of management practices by 10%, increase revenues by approximately 5% and increase profits by 12% (McKenzie and Woodruff, 2014). It is reasonable, therefore, to expect that the control group in this RCT likely experienced a similar increase in financial performance. Given this, the control group for this study likely understates the performance effects of the family participation training. In addition to making the control condition conservative, this experimental design also helps rule out potential network effects, motivational effects, or placebo effects that could be associated with attending a training. If control group entrepreneurs did not participate in any training, there could be concerns that treatment effects were driven by simply attending a training or the people entrepreneurs met during the training, rather than the content of what was taught.

The disadvantage with this experimental design is that it is impossible to know the impact of family participation relative to receiving no training. However, given the large causal literature on business practices training programs, it is likely safe to assume that a control group that received no training would have performed similarly or slightly worse than the control group in this study, which received the conventional business practices training.

### **Family Participation Training**

The goal of instructors in the family participation training was to teach entrepreneurs three routines for giving voice to family members, including claims-making members without direct involvement in the business. These routines involved having regular, structured conversations about cross-domain financial flows and providing family members the opportunity to voice their perspective, without necessarily committing to implementing those views in the business. Instructors began the training by introducing the notion of family and discussing how family can be important to entrepreneurs. This created a common starting point for entrepreneurs, especially those who may not have thought about their extended family’s involvement before. Instructors explained the various ways in which family, kin, and households can support the success of an enterprise, as well as potential tensions that can arise from family involvement, even when family members might not be directly involved in the business. This motivated entrepreneurs to understand how to gain their family members' support. At that point, instructors argued that giving family members an

opportunity to express their views in decisions about cross-domain flows could help motivate them to support the business.

The remainder of the first day was spent teaching micro-entrepreneurs how to craft a family budget, a case of participatory budgeting. This was presented as an opportunity for family members otherwise not involved in the business to exercise voice in cross-domain financial flows. This process began by covering the standard processes for putting together a budget: keeping records of expenditures and income for the household. Following established routines for participatory budgeting (Shields and Shields, 1998), the family budget involved collecting information about all the family's sources of income and anticipated expenses. This budget was therefore separate, and in addition to, the business' budget that entrepreneurs crafted on their own.

Entrepreneurs were taught to encourage all family members, regardless of whether they were directly involved in the business or not, to participate. It was emphasized that family members likely to make claims on the business should be encouraged to participate. This family budget gave entrepreneurs the opportunity to share with family members how their business works and how much income it generates and can contribute to the family. It then gave family members the opportunity to exercise voice over their needs and expectations about how that revenue is used and distributed. These expectations and claims were then compared with the sum total of revenues the business could provide. If claims exceeded what the business could provide, then family members and the entrepreneur discussed which claims would be prioritized and which would be deferred. Similar processes for participatory budgets have been implemented in businesses and communities, with the effect of giving constituents and employees voice in how funds are spent (Baiocchi and Ganuza, 2014; Gonçalves, 2014; Wu et al., 2024). Although this process does not guarantee that family members will get what they want, it does ensure they have an opportunity to be heard and observe the deliberation.

Having learned about family budgets, the second day began with teaching entrepreneurs how to discuss investments in their business using that budget. This discussion was meant to build on the family budget and represent a participatory discussion about resource allocation. The budget outlined the business' contributions to the family and the family's expectations; entrepreneurs were then encouraged to explain to family members what reinvesting in their business would entail and the potential returns to it. Entrepreneurs were then taught to ask family members whether they would be open to deferring some of their claims on business revenues in order to reinvest in the business. Family members had the opportunity to voice their opinions and views on whether any investments should be made and if so what claims or expenses should be deferred in order to make those investments. This participatory approach mirrors established practices for participatory resource allocation in firms (Askildsen, Jirjahn, and Smith, 2006; Addison et al., 2007; Jäger, Schoefer, and Heining, 2021). While it is not a binding commitment that entrepreneurs will make these investments or that family members must defer claims, it again gave all claims-making family members an opportunity to voice their opinions on the trade-off between short-term consumption and reinvestment.

The remainder of the second day was spent teaching entrepreneurs how to approach family members for general advice and feedback. This process involved training entrepreneurs to understand that family members, especially those who were likely to make claims on the business, can feel empowered when they are asked for their perspective. This form of voice complements the family budget and investment discussions, and offers a further opportunity for family members to learn more about the business and feel involved. This practice also had the benefit of creating a source of potentially valuable ideas for entrepreneurs. This form of voice has long been implemented in organizations espousing a participatory approach to management (Locke, Schweiger, and Latham, 1986; Smither, London, and Reilly, 2005; Price et al., 2006; Wu and Paluck, 2020). For example, a factory in China experimented with meetings in which workers could offer managers advice and feedback, which increased workers' motivation and productivity (Wu and Paluck, 2025). As in the case of the Chinese factory, asking for advice is not a commitment to implement it, but it does give workers voice. The breakdown of the topics taught during this training is presented in Table 1 and an illustrative subset of the slides used in the “family participation training” program are included in Appendix 15.

\*\*\* Insert Table 1 here \*\*\*

The family participation training program was developed by the author in collaboration with a Togolese consulting group, “Cabinet Cercle de Formation Épanouissement.” Discussions between the author and the consulting firm began in 2022 and proceeded to a series of focus groups with Togolese micro-entrepreneurs who were asked about what kind of training they would find most helpful. Entrepreneurs expressed a need for training that would address family involvement in business, as they expressed difficulty managing finances with their households. Given that micro-entrepreneurs could not hire many family members, there was a need to build cooperation without necessarily incorporating family into the business. This connected to academic research on participation in organizations. Through discussions with the Togolese consulting group, this research on participatory management was translated into three simple practices that aligned with the spirit of participatory management but were suited to the local Togolese context and could engage external family members. An initial draft of the training was developed and shared with local entrepreneurship educators in Togo, who provided minor feedback and suggested edits. After incorporating these edits, the author, working with the local consulting firm, trained three instructors who had experience teaching entrepreneurship programs in Togo. In particular, these instructors had taught entrepreneurship programs at the University of Lomé and in World Bank programs in Togo.

### **Business Practices Training for the Control Group**

To create a control group, I relied on the “Start and Improve Your Business” (SIYB) training program developed by the International Labour Organization (ILO). This training program was created to teach micro-entrepreneurs basic managerial best-practices to help structure their

organizations and improve their profitability. The full training program typically lasts 5-7 days and covers a wide range of topics including accounting and record-keeping, marketing, costing and pricing, inventory management, human resources and hiring, among others. This program has been extensively studied in development economics (Karlán and Valdivia, 2011; Mano et al., 2012; McKenzie and Woodruff, 2014). These studies show that this training typically leads to the adoption of these managerial routines, which in turn leads to modest performance gains. Meta-analyses of evaluations of this training program suggests that on average training entrepreneurs in these practices tends to increase revenues by approximately 5% and profits by 12% (McKenzie et al., 2021). Although in some cases these performance gains were not statistically significant, this is likely due to insufficient sample size rather than a lack of benefit from adopting these practices (McKenzie, 2021). In general, meta-analyses suggest that this training program has a net positive effect on micro-entrepreneurial performance (McKenzie, 2021).

This training program represents a suitable starting point for crafting a control group in this study for several reasons. First, there is considerable evidence about how it is likely to affect micro-entrepreneurs, which provides a useful baseline against which to judge the family participation training. Second, this training program does not discuss family, it instead focuses on business routines, assuming that the business and family are distinct domains that are maintained separate. This ensures that the control group is theoretically distinct from the treatment. Third, this program is large enough that topics within it can be chosen so as to create a common foundation with the treatment training. In other words, a subset of the training materials was selected to cover parallel topics in the control group and convey similar knowledge, although centered on the business and not the family.

The subset of ILO business practices taught to entrepreneurs in the control group related to inventory management, accounting, and marketing. The timeline for teaching these practices is outlined in Table 1. The first step in this training was introducing entrepreneurs to the importance of business routines and the systematizing effect they can have on a business. Then entrepreneurs learned about inventory management. This practice involves putting in place routines that enable the entrepreneur to monitor how much stock they have, what they are running out of and what timelines they need to follow for restocking. This topic was chosen because it would create an informational infrastructure for micro-entrepreneurs to craft a budget and evaluate investment opportunities. The second topic the control group micro-entrepreneurs learned was record keeping and accounting. This topic was chosen as a business-centered parallel of the family budget. In this topic entrepreneurs learned the basics about putting together a budget, how to keep records of expenses and income, and how to aggregate this into a monthly budget. As part of this exercise, entrepreneurs were taught how to factor in the depreciation of their equipment and how that creates a timeline for potential reinvestments in the business to replace decaying equipment. As a result, in this topic, control group entrepreneurs learned the skills of crafting a business-only budget and how to think about reinvestments in the business, when funds were available from the budget. Finally, entrepreneurs were taught marketing practices. These practices involved thinking about

customers and how to create value for them. A key practice in this module is the routine of soliciting feedback and advice from customers and using that to guide decisions for the business. Like the treatment condition, entrepreneurs learned to seek advice, but rather than seeking it from family members, they instead sought it from customers. Slides from the control group training program are presented in Appendix 15.

## **Comparison of Training Programs**

Structurally, the two training programs were identical. They lasted the same number of hours, included the same number of group exercises, had the same number of coffee breaks, and same number of lunches. They used the same classrooms and the same instructors. Both programs were delivered in French and Ewe. The parallel structure of the two training programs is illustrated in Table 1. Holding these factors constant across conditions reduces concerns that the treatment effects could be driven by differences in instructors, the environment, or opportunities for entrepreneurs to interact.

Building on this common structure, both training programs created a common foundation of knowledge for entrepreneurs, which is outlined in Table 2. This common foundation involved teaching all entrepreneurs financial literacy, understanding investing, and seeking advice. Financial literacy involves understanding how to keep track of cash flows and construct a budget. Treated entrepreneurs learned this during the family budget module, while control group entrepreneurs learned this during the accounting module. The topic of investment was also covered in both conditions. In the treatment condition it was discussed as an opportunity to give family members voice, while in the control group it was discussed during the accounting module when discussing the depreciation of equipment, and the need to save and reinvest in order to replace that equipment. Finally, seeking advice was taught in both cases. For treated entrepreneurs it was emphasized as a routine for engaging family members and empowering them, while for control group entrepreneurs it was presented in the marketing module as a way of learning from customers and building relationships.

The core difference between the treatment and control conditions was that the treatment used these basic business routines as ways of giving family members opportunities to express their views. In the treatment condition, routines related to budgeting, investments, and advice seeking were taught as spanning the boundary of the business and including family members who otherwise were not involved in the business. For the control condition, the routines involving budgeting, investments, and advice were centered within the business and did not discuss family members. As a result, the key difference between the two training programs wasn't whether entrepreneurs understood how to craft a budget or make investments, but rather whether they included external family members in those routines and whether those routines became opportunities for family to exercise voice.

Besides this central difference, the control group covered some additional material related to marketing and inventory management that was not related to topics discussed in the treatment group. In these modules, control group entrepreneurs learned how to track inventory, plan stock flows, use digital marketing, and create advertising campaigns. These additional topics were introduced in order to ensure both treatment and control groups received the same amount of instruction in total. While this content differed from the treatment group, research suggests these practices tend to improve performance for micro-entrepreneurs and should therefore contribute to the control group being a more conservative test of the treatment.

\*\*\*Insert Table 2 about here \*\*\*

## Data

Data about micro-entrepreneurs were collected during one pre-treatment survey and three post-treatment surveys. The pre-treatment survey was administered to all participants at the beginning of the first day of the training program, before any of the teaching began. The post-treatment surveys were conducted every three months after the training and took place at entrepreneurs' locations of business. The first follow-up survey took place three months after the training, the second six months after, and the third nine months after. The follow-up surveys were conducted by the same team of instructors who taught the program. This fostered a sense of trust between participants and the surveyors, who already knew each other, helping reduce attrition and improve the reliability of responses to questions. To further bolster this sense of trust, surveyors spent additional time with respondents after the end of each survey to help answer questions about their business and give general business advice.

A total of 640 entrepreneurs attended the first day of training and completed both days of training. Of these, 602 responded to the first follow-up survey three months later, 601 responded to the second follow-up, and 599 responded to the third. This represents an overall attrition rate of 6.5%. Other studies of micro-entrepreneurs report similar attrition rates, Anderson and McKenzie (2022) report an overall attrition rate of approximately 11% and Campos et al. (2017) report an average attrition rate of 9%. The final sample for the analyses consists of 593 entrepreneurs who completed the baseline survey and at least one post-treatment survey. Figure 1 illustrates the timeline of the surveys and experimental intervention.

\*\*\* Figure 1 about here \*\*\*

Of the 41 entrepreneurs who dropped out of the study, eight (about 20% of the attriters) dropped out because their businesses failed. All eight failures occurred between the baseline survey and the first follow-up survey, and all eight entrepreneurs whose businesses failed were in the control group. Entrepreneurs whose businesses failed were dropped from the sample because their revenues, profits, and investments were undefined. Appendix 7, however, replicates the main results including these failures and replacing missing observations with zeros. The results from

these analyses show that the treatment effects of family participation on investment and profits are even larger when including business failures.

**Dependent variables.** The first outcome of interest is whether entrepreneurs in the treatment condition adopted the participatory practices taught. As described earlier, the treatment taught three basic routines for having conversations with external family members about the business and giving them voice. These three routines were: 1) co-creating a family budget; 2) deciding on investments; and 3) soliciting advice and feedback. In each survey wave, entrepreneurs were asked a “yes” or “no” question to determine if they used each of these practices. *Family budget* is a binary variable indicating whether an entrepreneur created a family budget or updated an existing one with their families during the past three months. *Discussed investments* is a binary variable for whether an entrepreneur discussed potential investments in their business with their family members and discussed investments during the past three months. *Family advice and feedback* is an indicator for whether the entrepreneur sought advice, feedback, or new ideas for the business from their family members during the past three months. Using these three variables, *average participatory practices* measure the proportion of these three practices used by entrepreneurs during the past three months.

The second outcome relates to Hypothesis 1, which argues that micro-entrepreneurs who gave external family members voice will invest more in their businesses. Investments are measured as the inverse hyperbolic sine (ihs) of investments made during the previous three months, winsorized at the 1 and 99 percentiles. The ihs transformation was used because some entrepreneurs report zero investments and the distribution is skewed. Investments were measured using the local currency, Francs CFA (FCFA).

The second hypothesis argues that participatory practices will increase entrepreneurs’ financial performance. Financial performance is measured using *monthly profits* and a *performance index*. Monthly profits are measured as the ihs of business profits during the last month in FCFA, winsorized at the 1 and 99 percentiles. Surveyors asked entrepreneurs about their monthly profits during their visits and requested to see their accounts for verification. To improve the reliability of these reported financials, surveyors followed the process described in Anderson et al. (2021), which entails asking entrepreneurs about their best and worst weeks of sales and profits, then cross-referencing their profit estimates with their reported monthly sales and costs. Appendix 11 shows the results for Hypotheses 1 and 2 also hold when measuring investments and profits without the ihs transformation and without winsorizing.

The performance index was constructed as the mean of several standardized variables related to performance. This index included monthly revenues, weekly revenues during the best week of the previous month, weekly revenues during the worst week of the previous month, monthly profits, profits during the best week of the previous month, profits during the worst week of the previous month, and total number of employees. All variables were transformed using inverse hyperbolic sine and winsorized at the 1st and 99th percentiles. This approach to measuring financial

performance in businesses in developing economies reduces the potential influence of measurement error (Kling, Liebman, and Katz, 2007; Campos et al., 2017).

**Independent variables.** The main independent variable of interest is *family participation training*. This is an indicator variable, equal to “1” if the entrepreneur learned the three routines for giving voice in their business to family members and “0” if they received the traditional business practices training.

In addition to the study’s key independent variable, a subset of the analyses also include pre-treatment control variables. To account for the influence of ethnic culture, these controls include *Ewe* ethnicity, which is the majority ethnic group in Lomé. *Christian* is an indicator variable for whether the entrepreneur’s religion was Christian, since religious beliefs could plausibly shape family expectations and norms. *Female* controls for entrepreneur gender, since women entrepreneurs may experience these pressures differently than men. Spouses can be a source of kin pressure, the controls therefore include a dummy for whether the entrepreneur is *married*.

Regressions control for the highest level of *education* attained, which is an ordinal variable ranging from “1” for no schooling to “5” for university degree (undergraduate or graduate). Controls include the number of *family members involved* in the entrepreneur’s business, where involvement is defined broadly to include any member who either works in the business or provides advice or favors on a regular basis, even if they are not paid. Entrepreneurs with more family members involved may experience more pressure.

Regressions also control for various firm-level factors. They control for *firm age*, *management practices score*, and *sector* of activity. Firm age is the number of years since the business began serving customers. Management practices score is the proportion of 27 managerial best-practices for small businesses that each entrepreneur reported using (McKenzie and Woodruff, 2017). A set of six dummy variables are included to control for sector of activity. These six sectors include processing of agricultural products, construction, light manufacturing, services, retail sales, and hotels/restaurants. Finally, to account for variation in the size of different training cohorts, regressions control for *cohort size*, as the number of entrepreneurs in each training class.

Table 3 reports summary statistics at baseline for the sample. The correlation matrix is also presented in Table A2.1 of Appendix 2. The average entrepreneur earned profits of about 78,000 FCFA (130 USD) per month. Before the training program, only about 15% of participants reported making any investments in their business during the previous three months. Among those who invested, the size of their investment on average was 175,000 Francs CFA (292 USD). At baseline, few entrepreneurs reported having a household budget or discussing investments. The majority of the sample belonged to the Ewe ethnicity, self-identified as Christian, was married, and had completed middle school. All businesses had at least one household member involved, with an average of 2 family members. The average entrepreneur’s business had been active for about 10 years and used 50% of the best business practices described in McKenzie and Woodruff (2017). A significant majority of the sample (76%) is female. This is higher than other studies of

entrepreneurs in Lomé (Campos et al., 2017; Dimitriadis and Koning, 2022), suggesting this study's sample may not be representative of all entrepreneurs in Lomé. While this may impose some restrictions on the external validity of the results—discussed in more detail in the discussion section—it does not threaten causal identification.

\*\*\* Table 3 about here \*\*\*

Table 4 shows the baseline balance between the control and treatment groups on the study's main outcomes and entrepreneur characteristics at baseline. Column 2 shows the control group mean, Column 3 shows the treatment group average, while Column 4 shows the difference in means between the two conditions. In most cases the difference in magnitude between the two conditions is relatively small, with average educational level being higher in the control group and cohort size being larger in the control group. But none of these differences are statistically significant at the 1% level according to the t-statistics reported in Column 5 and the p-values reported in Column 6. The pair-wise test statistics were obtained by regressing the balance variable on the treatment indicator, clustering standard errors at the cohort level. Taken together, results from Table 4 suggest that the randomization was successful and that treatment and control conditions were balanced.

\*\* Table 4 about here \*\*

## Estimation

Regressions estimate the following pre-registered ANCOVA model:

$$y_{i,t>0} = \alpha + \beta \text{Family\_Participation\_Training}_i + \gamma y_{i,t=0} + \delta X_{i,t=0} + \tau_t + \varphi_i + \sigma_i + \varepsilon_{i,t}$$

where  $y_{i,t>0}$  is the outcome of interest for entrepreneur  $i$  in survey wave  $t$  after the training. There are three survey waves after the training.  $\text{Family\_Participation\_Training}_i$  is the indicator for the treatment and  $\beta$  captures the average causal effect of the participatory training.  $y_{i,t=0}$  is the outcome of interest measured at baseline ( $t=0$ ), before the training.  $X_{i,t=0}$  is a vector of control variables, measured at baseline. The regression includes survey wave dummy variables  $\tau_t$ , sector of economic activity  $\sigma_i$  dummies, and dummies for the community in which the training was held  $\varphi_i$ . Robust standard errors are clustered at the training cohort level because the randomization occurred at the cohort level. This estimation approach was preregistered on the Open Science Foundation (OSF), see Appendix 14 for more information about the pre-registration. Appendix 10 replicates the results using a difference-in-differences estimation approach, which was also pre-registered and includes entrepreneur fixed effects. The tables in this paper rely primarily on the ANCOVA approach because the autocorrelation in monthly profits is low, ranging from 0.13 to 0.23, which makes the ANCOVA estimates more accurate (McKenzie, 2012).

## RESULTS

## Adoption of Participatory Practices

This section explores whether entrepreneurs adopted the family participation practices that were taught. These consisted of three structured conversations: family budget, discussion of investments, and asking for advice and feedback.

Figure 2 plots the average number of participatory practices that entrepreneurs adopted by treatment condition, with 95% confidence intervals. The dashed line represents entrepreneurs who learned family participation practices, while the solid line represents the control condition. The figure shows that at baseline there is no statistically significant difference between the two groups. Entrepreneurs in either condition, at baseline, score about 0.3 on the average participatory practices measure, which is equivalent to using one participatory practice. After the training, the two groups diverge, with the treatment condition using, on average, all participatory practices taught, as early as 3 months after the training. By contrast, the control group does not adopt more participatory practices after the training and continues to use an average of one participatory practice. The adoption of participatory practices in the treatment group is high and remains high in all post-training time periods. This figure shows the training led to the adoption of new practices for the treatment group, which was not mirrored by the control group.

\*\*\* Figure 2 about here \*\*\*

Appendix 3 presents histograms of the number of practices adopted in each treatment condition. At baseline, Figure A3.1 shows that about 70% of micro-entrepreneurs in either condition used one participatory practice. The practice they reported using was “soliciting feedback.” Three months after the training, the control group had a similar distribution as at baseline. By contrast, however, Figure A3.2 shows that in the treatment condition about 95% of micro-entrepreneurs used all three practices. This suggests that the uptake of participatory practices was very high. This provides reassurance about compliance with the treatment, and it also implies that the treatment effects should be interpreted as an extensive margin effect.

Building on Figure 2, Table 5 explores the adoption of these practices using regressions. The regressions in Table 5 show the same pattern as Figure 2, while controlling for various entrepreneur and business characteristics. Estimating Equation 1, Models 1 and 2 show that family participation training led to the adoption of a family budget, models 3 and 4 show that it led to discussions of investments, and models 5 and 6 show that it led to increases in asking for advice and feedback as well. As expected under randomization, baseline characteristics do not significantly predict adoption of these practices, hence the control variables are mostly not statistically significant. These pre-registered analyses show that the training led to adoption of the practices taught.

The magnitude of the coefficients suggests that entrepreneurs in the treatment group were nearly 100% more likely to draft a family budget and discuss investments with their families than control group entrepreneurs. They are also 6% more likely to ask for advice from family. While this is a considerably smaller effect size, it still represents a statistically significant difference in the use of

this practice. Models 7 and 8 estimate the treatment effect on average participatory practices, the coefficients suggest that family participation training increases the score on average by 0.67, which is equivalent to adopting two new participatory practices. These results suggest that family participation training led to significant increases in the adoption of the practices taught. The difference between the treatment and control groups is driven by the adoption of a family budget and discussion of investments.

\*\*\* Table 5 about here \*\*\*

### **Family Participation Increases Investment**

Hypothesis 1 states that family participation training will lead to more investments in entrepreneurs' businesses. Investment is measured as the inverse hyperbolic sine of the total amount spent on investments in the business during the past three months, winsorized at the 1st and 99th percentiles.

Figure 3 plots average investment by experimental condition with 95% confidence intervals. Average investment by entrepreneurs in the treatment group is represented by the dashed line, while average investment by the control group is represented by the solid black line. The figure shows that while investments increased for both groups after the training, only entrepreneurs in the participatory condition continued to invest more over time. Investments by entrepreneurs in the control condition levelled off after 3 months and began declining 9 months after the training. By comparison, investments by entrepreneurs in the treatment condition did not stop increasing over time.

\*\*\* Figure 3 about here \*\*\*

Models 1 and 2 in Table 6 test Hypothesis 1 by regressing investments on family participation training, with and without controls. In both cases the coefficient for family participation training is positive, statistically significant, and large in magnitude. The size of the coefficients suggests that investments in the post-training periods are approximately half a standard deviation larger for treated entrepreneurs than control group entrepreneurs, which represents double the level of investments. Model 2 of Table 6 suggests that, on average, control group entrepreneurs invested approximately 4,500 FCFA (8 USD) during three months, while entrepreneurs in the treatment condition invested about double that amount, 9,740 FCFA (16 USD). Although these amounts are small, they accumulate over the duration of the study. By the end of the nine months the average treatment group entrepreneur would have invested a total of 29,000 FCFA (48 USD) compared to 13,500 FCFA (22 USD) by control group entrepreneurs. Analyses in Appendix 11, Table A11.3, show that the treatment led to a 20% increase in the likelihood that micro-entrepreneurs would make any investment in their business.

In the surveys, entrepreneurs were asked about what they invested in. About 85% of entrepreneurs who made any investment reported investing in new tools or equipment for the production process or delivery of services. Another 10% reported investing in repairs for existing tools or equipment and the remaining 5% reported making improvements to their business establishments. This breakdown of investments was similar for entrepreneurs in both experimental conditions.

Taken together, the evidence presented suggests that family participation training significantly increased entrepreneurs' investments, supporting Hypothesis 1.

\*\*\* Table 6 about here \*\*\*

### **Family Participation Improves Business Performance**

The second hypothesis argues that a participatory approach to family increases business performance. To explore whether performance increased, Figure 4 plots the average monthly profits over time for each training condition, with 95% confidence intervals. The dashed line represents entrepreneurs who learned family participatory practices, while the solid line represents those who learned traditional business practices. The figure shows that, as with investments, profits seem to initially increase for both groups after the training. This is in line with research showing that business practices tend to improve business performance (McKenzie and Woodruff, 2014). However, average profits continue to increase over time for treated entrepreneurs, while they level-off for control group entrepreneurs after six months.

\*\*\* Figure 4 about here \*\*\*

Figure 5 plots the distribution of profits by experimental condition at baseline and after the training. Panel A in Figure 5 plots the distributions at baseline, while Panel B plots the same distributions six months after the training. The dashed line is the kernel density function for entrepreneurs who learned family participation, while the solid line is the kernel density function for those in the control group. At baseline there is significant overlap in the two distributions, while six months after the training the distribution for treated entrepreneurs is shifted substantially to the right of the distribution for entrepreneurs in the control group. This illustrates how participatory training shifted the entire distribution, rather than only one category of performers.

\*\*\* Figure 5 about here \*\*\*

Pre-registered regressions testing hypothesis 2 are shown in Models 3-6 of Table 6. In all models the coefficient for family participation training is positive and statistically significant. In Models 3 and 4 the outcome is the log of monthly profits. Family participation training increases monthly profits by about a quarter of a standard deviation. Based on the regression in Model 4, predicted profits for the average entrepreneur in the control group, post-training, are 47,422 FCFA (78 USD) while for the average treated entrepreneur are 61,503 FCFA (102 USD). This represents an approximate 26% increase in profits for the treatment group compared to the control group.

Models 5 and 6 in Table 6 present similar results. In these regressions the outcome is the performance index, which is the average of several standardized proxies for performance. Participatory practices lead to an approximately 21% increase in the performance index compared to the control group in the post-treatment periods. These regression results, along with the graphical evidence presented above, suggest that family participation training increased entrepreneurs' financial performance, supporting hypothesis 2.

To contextualize these performance effects, other training programs find similarly sized effects for training programs with micro-entrepreneurs in developing economies. For example, Dimitriadis and Koning (2022) report a 27% increase in monthly profits from their social skills training in Togo and Campos et al. (2017) report a performance effect of 30% from their personal initiative training for entrepreneurs in Togo. Anderson et al. (2018) report a 41% increase in profits from a finance training for micro-entrepreneurs in South Africa.

## **EXPLORING MECHANISMS**

### **Which Participatory Routines Drove the Treatment Effects?**

The preceding analyses show that giving voice to family members through participatory practices increases micro-entrepreneurs' investments and improves their financial performance. Yet, a first order question is whether all the participatory routines (family budget, discussing investments, feedback) contributed to these effects and if so, whether some mattered more than others. To explore this, I use causal mediation analysis, which decomposes a treatment's total effect on an outcome into the parts that operate through specified mediators.

For each of the practices taught, I fit a causal mediation model, which produces an estimate of the mediation of each individual practice (Imai et al., 2011; Imai, Tingley, and Yamamoto, 2013). To capture the bundled effect of adopting all three practices, I also estimate a model with the composite index of all practices as the mediator (the variable labelled "average participatory practices"). Identification relies on randomized treatment and sequential ignorability of the mediator. To satisfy sequential ignorability, I include the baseline control variables in the mediation models. These analyses estimate the average causal mediation effect (ACME), which is the average size of the indirect effect: how much the outcome would change, on average, if the mediator were shifted from its value under control to its value under treatment while holding treatment status fixed.

Column 1 of Table 7 reports the ACME of each practice on investments, while Column 2 shows the 95% confidence interval associated with that estimated mediation effect based on 1,000 simulations with standard errors clustered at the cohort level. The estimates for family budget and discussed investments are identical because all the entrepreneurs who adopted the family budget also used it to discuss investments with their family members. These two practices were therefore adopted as a bundle by micro-entrepreneurs and it is impossible to distinguish the impact of one

from the other. The ACME reported in Column 1 of Table 7 suggest that budgeting and discussing investments are the dominant mediators, with confidence intervals that exclude zero and magnitudes suggesting the treatment effect is near-fully mediated by these practices. By comparison, seeking feedback has little mediating effect on investment. The ACME for this practice is close to zero and its confidence interval includes zero, suggesting it is not statistically significant.

Column 3 of Table 7 reports the ACME of the participatory practices on profits, along with confidence intervals in Column 4. As with investments, the family budget and discussing investment practices mediate most of the treatment effect on profits. Virtually all the effect of the treatment on profits operates through budgeting and discussing investments. By contrast, the feedback practice plays a relatively minor mediating role for profits, although it is statistically significant. Overall, the mediation analysis suggests that the treatment program's effects on both profits and investment are largely transmitted through adopting the family budget and discussing investments, whereas soliciting family feedback plays a modest mediating role. This may be in part because the practices of budgeting and discussing investments relate more directly to cross-domain financial flows than soliciting feedback.

\*\*\* Table 7 about here \*\*\*

## **Mediating Mechanisms**

Beyond understanding the role of each practice in driving the treatment effects, the theory suggests these practices could set in motion several different processes which could account for the observed effects. In particular, prior research suggests that voice and participation can increase motivation and trust (Tyler and Blader, 2003; Detert and Burris, 2007; Wu and Paluck, 2025), which could lead family members to make fewer claims on business income and allow for more reinvestments, as well as generally provide more support and help in the business. Voice can also lead to perspective-taking and reductions in conflict (Locke and Latham, 2002; Greer, Van Bunderen, and Yu, 2017), which in turn could reduce distractions for entrepreneurs and enable them to focus on the management of their businesses. To explore if any of these mechanisms explain the treatment effect, I estimate the impact of the treatment on family members' motivation, entrepreneurs' trust towards family members, conflict with family members, and the magnitude of cross-domain financial flows. While these regressions were not pre-registered, they shed light on potential pathways between the treatment and outcome. Then, using causal mediation analyses, I estimate whether these mechanisms mediate the effect of the treatment on investments and profits. For these analyses I introduce the following outcome measures:

***Family motivation.*** Entrepreneurs were asked to rate the extent to which family members seemed motivated by the business' success. This involved assessing the extent to which they seemed willing to contribute to the business' success. Entrepreneurs answered on a six-point Likert scale ranging from "not at all motivated" to "extremely motivated."

***Trust of Family.*** Entrepreneurs were also asked to rate on a 5-point Likert scale the extent to which they trusted their family members on matters related to their business, ranging from not at all to completely. This question was meant to gauge their feelings of trust towards all family members, whether internal or external to the business, in any matter that might affect the business.

***Frequency of disagreements.*** In each survey entrepreneurs were asked how frequently disagreements occurred with family members during the previous three months. Disagreements were also broadly defined as any conflict between the entrepreneur and their family members. Entrepreneurs responded on the following 5-point Likert scale: “Less than once every two months”; “Once every two months”; “Once a month”; “Once a week”; “Most days.”

***Cross-domain financial flows.*** In the third and fourth survey waves—six and nine months after the training respectively—entrepreneurs were asked how much of their monthly profits they had given to their family during the last full month, beyond salary payments or rewards for helping in the business. This was meant to approximate the extent to which family members made claims on business income. This was measured as the absolute value of cash transferred as a percentage of monthly profits.

For the variables “family motivation,” “trust of family,” and “frequency of disagreements,” Equation (1) was estimated, as in the regressions in Table 6. For regressions where the outcome is cross-domain financial flows, observations for the baseline time period are missing. As a result, these regressions were estimated using OLS without controlling for the baseline value of the outcome. Otherwise, the model is the same as in Equation 1.

Models 1 and 2 in Table 8 estimate the impact of family participation training on the perceived motivation of family members. Family participation has a positive, statistically significant, and large in magnitude effect on motivation. It increases perceived motivation by one standard deviation. The predicted value for control group entrepreneurs is “a little motivated” while the predicted value for treated entrepreneurs is “quite motivated.” This difference suggests that family participatory practices led entrepreneurs to feel that their family is more motivated to contribute to the business. This may suggest that family members are more willing to make short-term sacrifices in consumption in order to reinvest in the business or help more in the day-to-day work of the business.

Models 3 and 4 in Table 8 show the results of regressing trust in family on the treatment. The coefficient for family participation is positive and statistically significant. The magnitude of the coefficient suggests that the treatment increased in trust towards family members by 1.5 standard deviations. In the post-treatment time periods, the average control group entrepreneur reported feeling “somewhat trusting” towards their families, whereas treatment group entrepreneurs reported “very trusting” on average. This result suggests that the treatment led to a substantive increase in feelings of trust towards family members. The family participation training likely led to more regular and substantive interactions with family members (Kwon and Kim, 2025), which could strengthen ties and build more trust.

Models 5 and 6 in Table 8 show that family participation training has a negative, statistically significant and large effect on the frequency of disagreements. The magnitude of the effect is such that participatory practices reduce the frequency of disagreements by a standard deviation. Based on the regression in Model 2, the predicted frequency of disagreements for entrepreneurs in the control group is “every two months,” while the predicted frequency for those in the treatment group is “less than every two months” in the post-training periods. The theory of participation suggests that it can encourage perspective-taking, which in turn can lead to reductions in conflict (Locke and Latham, 2002; Greer, Van Bunderen, and Yu, 2017). With less conflict, micro-entrepreneurs might agree with family members about investments in the business and be able to focus more on managing the business.

Figure 6 shows the distribution of frequency of disagreements by treatment condition, three months after the training. At baseline, there is no statistically significant difference between the control and treatment groups in frequency of disagreements. But Figure 6 shows that three months after the training there are significant differences. According to the figure, most entrepreneurs in the participatory condition have disagreements less than every two months, compared to entrepreneurs in the control group who report conflict at higher frequencies. This illustrates the decrease in disagreements experienced by the treatment group.

\*\*\* Figure 6 about here \*\*\*

In supplementary analyses in Appendix 3, Table A3.1 shows that micro-entrepreneurs felt that the family budget itself directly reduced conflict with family members. In the last survey wave, micro-entrepreneurs were asked a “yes or no” question: “did the adoption of a family budget reduce tensions with family members?” Models 3 and 4 in Table A3.1 show that the treatment increased the likelihood of responding yes to this question. This result helps corroborate the evidence that family participation reduced conflict for micro-entrepreneurs.

Finally Models 7 and 8 report the results from regressing cross-domain financial flows on the treatment. Cross-domain financial flows were operationalized as the percentage of monthly profits claimed by family members. The regression results show that the family participation training reduced the percentage of profits flowing from the business to family members. In the two time periods for which there are data, participatory training reduced the percentage of profits given to family members by about 19 percentage points. Entrepreneurs in the control group shared approximately 75% of their profits with their households, while entrepreneurs in the treatment group shared about 56% of their profits. This suggests that treated entrepreneurs were able to preserve a larger proportion of their profits for potential reinvestment in the business, perhaps because family members were more open to deferring consumption.

\*\*\* Table 8 about here \*\*\*

The regressions in Table 8 establish that the treatment led to increases in family motivation, family trust, and decreases in conflict and cross-domain financial flows. To understand the extent that

these changes mediate the treatment effect on investments and profits, I apply the same causal mediation analysis as in Table 7.

The causal mediation analyses in Table 9 reveal that family motivation, trust, reducing disputes, and reducing financial flows all mediate the treatment effect on investments and profits. Column 1 of Table 9 shows the estimated ACME for family motivation, trust, family disputes, and financial flows on investments, which are large in magnitude, with confidence intervals above zero. The mediator with the largest effect, by a significant margin, is the reduction in cross-domain financial flows. Reducing the percent of profits claimed or requested by family members seems to drive, to a large extent, the increase in investments. Trust of family members also plays a critical role. The interactions created by participatory practices build trust between entrepreneurs and their family members, which is critical to supporting investments in the firm. Finally, family member motivation and reduction in disagreements both have sizeable mediation effects, but seem, according to these analyses, to mediate a relatively smaller proportion of the treatment effect. These results suggest that family participation increased investments largely through its reduction in cross-domain flows and its increase in trust, but also by improving family's motivation and reducing disagreements.

Column 3 of Table 9 shows that the pattern of mediation effects is similar for profits. Increases in family motivation and trust, along with reductions in disagreements and financial flows mediate the treatment's effect on profits. The magnitudes of the effects are large and statistically significant. The mediators with the biggest effects are reductions in cross-domain financial flows and trust in family. This suggests that the investments in the business likely play a critical role in increasing profits. Similarly, participation helps build trust and strengthen relationships, which in turn likely enables micro-entrepreneurs to rely on family members more in their businesses. Finally, family member motivation and reductions in disagreements also mediate part of the treatment effect, although this is relatively smaller. Overall, these results indicate that the training's effects on profits operate mostly through reductions in cross-domain flows and increases in trust, but also by increasing family member motivation and decreasing disagreements. These mediation analyses reveal that all the theorized mechanisms play some role in accounting for the observed treatment effects on investment and profits.

\*\*\* Table 9 about here \*\*\*

Although not included in the mediation analyses in Table 9, Appendix 5 provides complementary evidence that investments mediated part of the treatment effect. Table A5.1 shows estimates of the treatment effect on the subsample of micro-entrepreneurs who made no investments. While the treatment effect is still positive and statistically significant, it is about 5 percentage points smaller. This statistically significant difference suggests that making investments likely accounted for part of the performance effect of family participation.

### **Entrepreneur Self-Reported Changes**

The preceding analyses show that much of the treatment effect seems to have been mediated by the theorized changes in cross-domain flows, motivation, trust, and conflict. To triangulate these mechanisms, I use self-reported descriptions of changes made after the training program. During the first follow-up survey after the training program micro-entrepreneurs were asked an open-ended question about what the most significant change in their business had been since the training. Although micro-entrepreneurs responded in short sentences, I use these responses to see whether entrepreneurs' self-reports align with the previous mechanisms.

This survey question was originally intended to capture changes in business operations, rather than family interactions. As a result, its wording primed entrepreneurs to think of operational changes, since it listed "introducing a new product, improving facilities, hiring someone, using a new accounting method, cleaning the premises" as examples of changes. Nevertheless, despite being prompted to think about non-family related changes, a substantial number of entrepreneurs mentioned changes related to their family members. The question provided only enough space for a brief sentence description of the change. These were manually coded by the author to identify mentions of family members. About 22% mentioned family in their response to the question about change and 70% of these were part of the treatment group.

The answers with mentions of family were further coded using a research assistant to identify the kinds of changes entrepreneurs described when they mentioned family. The research assistant who coded the text was a doctoral student, trained by the author. Table 10 summarizes this coding and provides an illustrative example for each one.

This coding process yielded three types of changes. The first was *improvements in communication or collaboration* with family about the business. In these cases, entrepreneurs alluded to improvements in relationships with family members. About 74% of the responses mentioning family fell under this category. The second type of change was statements about receiving more *support from family members*. About 17% of family-related changes mentioned receiving more encouragement, financial support, or emotional support from family members. The remaining type of change, about 9% of cases, related to increased *exposure of family members to the business*. These changes mentioned that a certain family member, often a child or spouse, got to know the business better.

\*\*\* Table 10 about here \*\*\*

These self-reported types of changes align with the theoretical expectations of the treatment's impact. Family participation was designed to create opportunities for micro-entrepreneurs to have regular, structured conversations with their family members, which was supposed to improve exchanges about the business. According to micro-entrepreneurs' responses, they seem to have experienced more communication and report their family members as having more exposure to their businesses, both of which are elements of the family participation training. Moreover, the family participation training was designed to motivate family members to support the business,

which some micro-entrepreneurs also seem to have experienced when they referenced financial or emotional support from family members as an important change in their business.

These patterns provide some insights into what the treatment seems to have done for micro-entrepreneurs from the micro-entrepreneurs' perspective. These data provide some preliminary evidence that the treatment seems to have had the intended impact of giving voice to family members and motivated family members to support micro-entrepreneurs.

## **HETEROGENEITY ANALYSES**

The preceding sections provided evidence that family participation improves performance by reducing cross-domain financial flows. This section triangulates this argument using heterogeneity analyses. In particular, if the performance effect of family participation is driven by its impact on financial flows to the family, we would expect these performance effects to be larger for micro-entrepreneurs for whom financial flows to their families are particularly pressing.

I use two indicators for the extent to which micro-entrepreneurs are likely to experience pressure to share income with family members. The first is household income excluding the micro-entrepreneur's business revenues. This was measured during the baseline survey and is meant to capture the household's financial dependence on the micro-entrepreneur. The larger the dependence, the more pressure to share income the entrepreneur is likely to experience. The second indicator is whether the micro-entrepreneur's family experienced an unexpected serious illness or death during the preceding months. Micro-entrepreneurs were asked whether this had happened to their families in the third and fourth follow-up surveys.

Table 11 shows the regression results from these heterogeneity analyses. Models 1 and 2 show the interaction effect between family participation and household income at baseline. This measure of monthly household income excluded micro-entrepreneurs' income. The interaction term is negative and statistically significant, suggesting that the treatment effect was stronger for families with less income. This suggests that micro-entrepreneurs whose families were more dependent on them and therefore likely made more requests of them, benefitted more from the family participation training.

Similarly, Models 3 and 4 in Table 11 show the interaction effect between the treatment and whether the micro-entrepreneur's family experienced an unexpected loss or illness during the previous three months. The interaction is positive and statistically significant, suggesting that the treatment was particularly helpful to micro-entrepreneurs whose families experienced an adverse health shock.

\*\*\* Table 11 about here \*\*\*\*

These results suggest that the family participation training was more valuable to micro-entrepreneurs who were likelier to be exposed to more family requests for financial support and

therefore larger cross-domain financial flows. In these cases, the structured and regular discussions established by the family participation training were likely especially valuable to entrepreneurs. Taken together, these analyses provide some indirect evidence that the family participation treatment was impactful because of its relevance to managing financial flows between entrepreneurs and their families, since entrepreneurs who had more pressure seem to have benefited the most.

## **DO FAMILIES BENEFIT FROM PARTICATION?**

The results from the field experiment suggest that family participation practices led to material improvements in micro-entrepreneurs' performance. To explore whether their family members may have also benefitted, Table A3.1 in Appendix 3 regresses the absolute sum of money transferred from the micro-entrepreneur to their family members on the treatment. As opposed to the regressions in Table 8, these regressions explore whether micro-entrepreneurs' families participated in the performance improvements and if those performance improvements were large enough to counterbalance the fact that they received a smaller proportion of micro-entrepreneurs' profits. The results suggest that they did. The coefficient for family participation training is positive and statistically significant. The magnitude suggests that families of micro-entrepreneurs in the treatment condition received approximately 20 USD more per month than the families of micro-entrepreneurs in the control condition. While these figures are self-reported, they suggest that families participated in micro-entrepreneurs' financial gains. Taken together, this may suggest that family participation is a win-win for micro-entrepreneurs and their families.

## **ROBUSTNESS CHECKS**

A potential concern could be that the treatment effect is confounded by changes in micro-entrepreneurs' conceptualization of family. Since the treatment training began by outlining that family is important for micro-entrepreneurs' business success, it is possible that it changed their views on family. This, in turn, may have changed their interactions with family members, thereby explaining the performance gains. To explore whether this might be a concern I use micro-entrepreneurs' response to a question about the importance of family. In the last survey wave, micro-entrepreneurs were asked to rate on a 4-point Likert scale the degree to which family was important to them. This question has been used in the World Values Survey to measure the centrality of family in people's lives (Bertrand and Schoar, 2006). Models 1 and 2 in Table A4.1 show the results from regressing this measure of family importance on the treatment. There are only 587 observations because this question was only asked in the last survey wave. The coefficient for family participation was not statistically significant, and the magnitude of the coefficient is small. There is therefore little evidence that the family participation training changed micro-

entrepreneurs' values or orientation towards their families: both treatment and control perceived family as equally important.

A related concern about how the treatment impacted micro-entrepreneurs relates to whether it primed or encouraged micro-entrepreneurs to invest more compared to the control group. It is possible that micro-entrepreneurs in the treatment condition were exposed to more discussion of investing because one of the participatory practices was discussing investments with claims-making relatives. If this were the case, micro-entrepreneurs in the treatment might be re-investing more simply because they are more aware of this issue and likelier to take it seriously. Several factors make this possibility less plausible. First, the control group also discussed investments. During their lectures on accounting they were taught to understand depreciation and the importance of investing to keep equipment up to date and expand production. As a result, both groups were primed to think about investments. Second, there is evidence that both the control and treatment group entrepreneurs were similarly poised to make investments or took similar steps to be able to invest. Models 3 and 4 in Table A4.1 in Appendix 4 regress whether the micro-entrepreneur had the necessary documents to apply for a loan on the treatment and Models 5 and 6 in the same table regress the number of loans obtained on the treatment. In both cases there is no statistically significant difference between the two groups for these variables that proxy for investment readiness. Third, one of the central findings in this study is that family participation training leads to more investment than the control group, but this does not mean the control group did not invest more after the training. In fact, Models 1 and 2 in Table A4.2 show the opposite: entrepreneurs in the control group were 29% likelier to invest after the training and they invested nearly three times more than they had at baseline. These regressions restrict the sample to only the control group entrepreneurs and compare their post-training investment behavior with their pre-training levels. These investment patterns suggest that the control group training motivated those micro-entrepreneurs to invest more, but it didn't enable them to achieve the investment levels the treatment group reached.

Although attrition levels were low compared to other studies, Appendix 8 explores whether there is any evidence of attrition bias. In Table A8.1, I regress whether an entrepreneur who entered the study at baseline was also present in the endline survey, using the model described in Equation 1. The coefficient for family participation training is near zero and not statistically significant. This implies that the treatment is not correlated with attrition. Appendix 8 also reports Lee bounds for the treatment effect on monthly profits. Lee bounds simulate what the data might look like if attrition was biased, making it possible to understand how bias might influence coefficients (Lee, 2009). The Lee bounds analyses show that even the lower bound for the treatment effect is positive and statistically different from zero. Moreover, this approach estimates a 95% confidence interval for the treatment effect, which is 14% to 31%, which contains the estimate reported in Table 6. In combination, these results provide evidence that the observed attrition is unlikely to have biased the results.

To ensure the main results are not driven by omitted variables, Appendix 9 replicates the results in Table 6 after including more control variables. These regressions control for the number of children the entrepreneur has, total number of employees at baseline, whether the entrepreneur had an account with a micro-finance institution, the number of loans at baseline, the size of their advice network at baseline, and whether they had access to slack savings in an emergency. The coefficient for participatory training is still positive, statistically significant and does not change in magnitude from what was reported in Table 6.

The estimation section explains that the ANCOVA approach is best suited for samples with low levels of autocorrelation in the outcome variable, as is the case in this sample, yet it is also common for experimental studies to estimate treatment effects using a difference-in-differences approach. To ensure that the main results of this study are not model dependent, Appendix 10 replicates Table 6 using a difference-in-differences model. This difference-in-differences approach allows for entrepreneur fixed effects which have the advantage of controlling for a range of time-invariant factors. In these models the control variables are interacted with a post-treatment dummy variable, since the controls are time-invariant. These regression results are reported in Table A10.1. The results using this estimation approach replicate the findings in Table 6, although the magnitude of the coefficients is smaller in these regressions. This may suggest that the results reported in Table 6 are an upper-bound in terms of effect size.

Finally, the key outcomes of interest (investments and profits) were transformed using *ihs* and winsorizing. To ensure that the study's results are not dependent on these transformations Appendix 11 replicates the results for investments and profits using the untransformed versions of those variables. Table A11.1 presents the regression results and shows that the treatment increases investment when using measures that are not winsorized and have not been transformed using *ihs*. Models 5-8 in the same table also show that the results hold when using measures of profits that are not winsorized and not *ihs* transformed. Similarly, to ensure that the results for the performance index are not overly sensitive to any one measure included in the index, Table A11.2 in Appendix 11 reproduces the results for the performance index after sequentially dropping each of the measures included. The results in Table A11.2 show that when each of the component measures are excluded the treatment effect remains statistically significant and similar in magnitude to the effect in Table 6.

## **DISCUSSION**

Micro-entrepreneurship is a form of entrepreneurship that is particularly prevalent in low-income settings. In these contexts, micro-entrepreneurs and their families are often deeply intertwined. Micro-entrepreneurs rely on their family members for labor, investments, and advice among other things, while many family members depend on micro-entrepreneurs for financial support. Under these conditions, micro-entrepreneurs often receive so many requests for a share of their business income that it hampers their business' growth (Geertz, 1956; Portes, 1998; Squires, 2024),

ultimately limiting their ability to support their families. While extensive research on family business has explored various tensions that arise between entrepreneurs and their families, it often emphasizes tensions that arise from family members holding positions in the business. It remains unclear, therefore, how micro-entrepreneurs can manage family members who are not involved in their business and who are therefore not subject to the typical governance mechanisms family businesses rely on. This study argues that participation, giving external family members voice, motivates them to support the business and builds trust, which in turn enables micro-entrepreneurs to invest more and increase performance.

This study tests this theory using a randomized control trial with 640 micro-entrepreneurs in Lomé, Togo. The experimental design randomized half the entrepreneurs into a treatment condition where they learned about family participation and the other half into a control condition in which they learned closely related business practices that do not involve family members. Results from the RCT show that the family participation condition led to the adoption of participatory practices for family, which in turn doubled the investments in the firm and increased profits by 26% more than the control group, nine months after the training.

Exploratory analyses of the mechanisms driving this effect suggest that the three participatory practices taught increased family members' motivation to support the business, increased trust between the entrepreneur and their families, reduced disagreements, and reduced the short-term financial flows from the business to the family. Combined, these factors enabled micro-entrepreneurs to invest more in their businesses, compete, and generate more profits. Importantly, there is also evidence that while the proportion of profits claimed by relatives decreased, the absolute value of cash transfers to them increased, suggesting that the short-term sacrifices that families made improved their financial well-being in the long run.

## **Implications for Theory**

### ***Training Entrepreneurs***

This study has several implications for the growing literature on training entrepreneurs (Bryan, Tilcsik, and Zhu, 2017; Lyons and Zhang, 2018; Eesley and Lee, 2021; Spina, 2024). Research in this area shows that many of the skills and mental frameworks involved in becoming an entrepreneur can be learned and that many of the routines and practices needed to effectively manage a business can also be learned through training programs (McKenzie, 2021; McKenzie et al., 2021). At the same time, there is considerable variation within this literature on the size of treatment effects: some practices tend to be adopted more than others and effects can be short-lived (McKenzie and Woodruff, 2014). Moreover, recent research suggests these training programs can have unintended consequences for entrepreneurs (Pongeluppe, 2024).

This study adds to this literature by suggesting that training programs can go beyond their emphasis on standard business best-practices and engage with entrepreneurs on issues related to family.

Family relationships in business are complex and often fraught (Aldrich and Cliff, 2003; Ruef, 2010; Li and Piezunka, 2020). It is therefore not obvious, *ex ante*, that a training program on this topic would be effective at changing family dynamics. There are reasons to expect that touching on this issue could even backfire for entrepreneurs and have negative consequences, given how central family support is to micro-entrepreneurial success. Yet, this study shows that insights from management research can be applied to familial relationships and that doing so in a culturally sensitive way can lead to consequential changes in familial dynamics and firm performance.

More broadly, the family participation intervention examined in this study could be described as a "relational training" program because it emphasized the development of relationships, rather than the transmission of knowledge about practices. In this case, these were relationships with family members and their development happened by giving them voice. Existing research on entrepreneurship training tends to emphasize training programs that teach entrepreneurs an operational process or routine, or a certain skill, rather than how to manage a specific kind of relationship. These training programs are therefore more skill-based rather than relational. This study shows, however, that taking a relational approach to entrepreneurship training can be valuable. Moreover, it is likely that such relational training programs would complement existing skill-based management training programs. We might expect that managerial practices, such as accounting, become more impactful when entrepreneurs are also trained in relational techniques. Hence, there may be a complementarity between the two forms of training.

Finally, this study contributes to the literature on entrepreneurship training by presenting an approach to training that is local. Most training programs that have been studied involve taking business practices developed in high-income countries and transporting them to the Global South. While the value of good accounting practices is likely universal, this study suggests there is also value in developing training programs that touch on the local social institutions that shape entrepreneurs' lives in those contexts. In the context of Togo, as in much of sub-Saharan Africa (Collier and Garg, 1999), family and kin are central social institutions for entrepreneurs. By explicitly integrating this social institution into this training, it made the practices highly relevant to entrepreneurs' lives and it likely made it easier for them to understand the practices. This suggests an alternative framework for developing training programs that uses local working conditions as a starting point, rather than the transfer of knowledge from abroad.

### ***Family Business***

The literature on family business is extensive and spans the disciplines of management, economics, sociology, and psychology. Using these various disciplinary lenses, this research has long studied a wide range of tensions and conflicts that can arise in family businesses and that undermine their performance (Morck and Yeung, 2003; Gomez-Mejia et al., 2011; Villalonga et al., 2015). These issues include nepotism, expropriation of investors, tunnelling of funds, entrenchment, and more (Morck, Wolfenzon, and Yeung, 2005; Bertrand et al., 2008; Jeong, Kim, and Kim, 2022). Based on these insights, this literature has also explored governance mechanisms and interventions to

mitigate these issues and unlock family business performance (Bennedsen, Gonzalez, and Wolfenzon, 2010; Gersick and Feliu, 2014). These include diverse boards of directors, incentive pay packages, stock ownership structures, and legal protections, among many others (Gomez-Mejia, Larraza-Kintana, and Makri, 2003; Anderson and Reeb, 2004; Madison et al., 2016).

Recent advances in this area point out that much of this literature has focused on issues that arise from family members occupying roles and positions in the business (Li and Piezunka, 2023). Yet, family members need not be part of the business domain to have an impact on family businesses (Li and Piezunka, 2020). This study builds on this perspective by exploring another way in which external family members can affect family businesses: through requests for financial assistance and claims on business income. These requests create cross-domain financial flows from micro-entrepreneurs' businesses to their families, most of whom are not members of the firm. Although this pattern has long been documented, dating back to as far back as Weber (1930 [1904]), these kinds of financial flows represent a puzzle for researchers because it is not *ex ante* clear how they can be managed when the family members that create these flows are not part of the business domain. This study proposes an answer to this puzzle: participation. Participation of external family members gives them voice and strengthens relationships with entrepreneurs, which in turn leads to motivation and trust.

Part of this study's contribution to family business research also relates to the literature on stewardship. Research on stewardship in family business argues that when family members in a business identify with it and become emotionally invested in the business, they are likelier to act as stewards that put the business' well-being ahead of their own (Miller and Le Breton-Miller, 2006). This literature argues that stewardship is likelier to emerge when family members come to identify with the business and see it as an extension of the family (Le Breton-Miller and Miller, 2009). It also becomes likelier when family members think of the business as a multigenerational endeavor and something to be handed down to future generations (Miller, Le Breton-Miller, and Scholnick, 2008). As a result, this literature has argued that elevating family members within the business, giving them more decision-making authority, and larger ownership shares can incentivize these family members to become stewards of the business (Eddleston and Kellermanns, 2007; Le Breton-Miller, Miller, and Lester, 2011). The present study adds to this literature by considering a case where integrating family members into the business may not be possible. Micro-enterprises are too small to accommodate all claims-making family members. Moreover, as informal businesses they are not legal entities whose ownership can be easily shared among family members. This study suggests that giving family members voice, even if it does not entail a binding commitment to follow their suggestions, can build considerable support from family members for micro-enterprises.

This study also contributes to the family business research by considering an understudied form of family business: micro-enterprises. Family businesses are often defined as those where multiple family members have ownership stakes or in which multiple generations of a family are present (Villalonga and Amit, 2020), which omits businesses in which family may be extensively involved

but lack formal roles or ownership. Building on the conceptualization of family businesses as those that span the family and business domain through multiplex ties (Li and Piezunka, 2023), this study extends family business research to also include micro-enterprises. Doing so reveals important and unique family dynamics. This study considers the specific dynamic of cross-domain financial flows, but other tensions and conflicts remain to be explored by future researchers.

Finally, the results in this study are causally identified. Studying family businesses is especially challenging because data about families and family interactions are often inaccessible. As a result, it can be challenging for researchers to use quantitative causal identification strategies. Many results about family businesses are therefore correlational or qualitative. This study adds the element of causality in its results on family business.

### ***Embeddedness***

Embeddedness has long been a core theoretical construct in economic sociology (Granovetter, 1985). An insight of this perspective has been that economic actors, such as entrepreneurs, are embedded in networks that both enable and constrain economic action (Coleman, 1990; Portes and Sensenbrenner, 1993). For entrepreneurs, and micro-entrepreneurs in particular, a core network in which they are often embedded is their families (Aldrich and Cliff, 2003; Khavul, Bruton, and Wood, 2009). This embeddedness can create close, trusting, and dependable relationships, which can enable individuals to achieve their goals (Portes, 1998). But, embeddedness can also entail obligations to the social group, especially when the social group is cohesive, such as in the case of many families, and these obligations can conflict with individuals' goals (Portes, 2014).

An assumption in embeddedness theory that has recently come under empirical scrutiny is that individuals confide in their close ties (Small, 2017; Small, Brant, and Fekete, 2024). Recent research suggests that closeness does not necessarily lead to more or better communication, especially on issues that are contentious or emotionally charged (Brashears and Quintane, 2018; Offer and Fischer, 2018). This suggests that for micro-entrepreneurs communication about finances with their family members—especially claims-making family members—may be especially challenging and complex. Seen from this perspective, it may not be surprising that micro-entrepreneurs' business fail because they become overwhelmed by financial requests from family members – since talking about the issue may be emotionally fraught.

This study argues that if communication about finances with family is not automatic for micro-entrepreneurs, structured routines that seed conversations about finances may be necessary. These routines help create opportunities for conversations about this sensitive issue, thereby enabling difficult discussions about what needs should be prioritized and how to balance family needs with business needs. This, in turn, enables better coordination between the family and the micro-entrepreneur, to the benefit of both.

The fact that family participation routines had such a large impact suggests that communication about finances is likely difficult, even within close ties such as those between micro-entrepreneurs

and their family members. Hence, this suggests that family embeddedness may not lead to effective coordination, even though the relationships are emotionally close. The returns to the treatment reveal, however, that enabling coordinating is not impossibly difficult: simple routines can catalyze what would otherwise be difficult conversations. When these conversations take place it often enables coordination and cooperation that benefits both parties.

### ***Participatory Management***

This study also has implications for participatory approaches to management. Research on participatory management dates to the early 1950s with foundational work by Argyris (1955), March and Simon (1958), and others (Hofstede, 1968; Latham and Yukl, 1976). The theory that including organizational members in decisions could improve management has given rise to large literatures in psychology, management, and economics that has aimed to understand the strengths and weaknesses of this approach (Pateman, 1975; Ichniowski and Shaw, 1999; Kowalski et al., 2025; Wu and Paluck, 2025). The results from this body of research have been mixed, in part because of the wide range of forms of participation and the often self-reported nature of measures (Lee and Edmondson, 2017). Recent calls for research on democratic organizing and methodological improvements have brought renewed attention to this form of management (Battilana, Beckman, and Yen, 2025). This study builds on three forms of participation that have long been studied: participatory budgeting (Baiocchi and Ganuza, 2014), resource allocation decisions (Addison et al., 2007), and feedback (Locke, Schweiger, and Latham, 1986).

This study makes two key additions to the literature on participatory management. First, it shows that participation is not only about engaging internal stakeholders. Instead, it can also be applied to external stakeholders. Prior research has primarily explored the participation of workers in managerial decisions. In this study, entrepreneurs used participation to give voice to external family members, many of whom were not directly involved in the business. This study provides evidence that doing so seems to have empowered these external stakeholders and even strengthened relationships with them. This, therefore, suggests that as firms attempt to manage the wide range of stakeholders that surround them, participatory practices can be a part of this process.

Second, this study provides more causal evidence of the performance enhancing implications of participatory practices. This adds to the research suggesting that participation can be a motivational force that spurs productivity. In this case, motivation leads to more cooperation and hence more reinvestment in the business. Most of the quantitative, experimental studies of participation have focused on feedback as a means of voice. Yet, this study explores two additional participatory practices--participatory budgeting and resource allocation decisions--and suggests that these forms of participation may be more impactful than providing feedback in terms of their performance effects.

### ***Practical Implications***

Results from this study have two central implications for practice. First, these results suggest that micro-entrepreneurs who operate in resource constrained environments and for whom cross-domain financial flows are significant can benefit from creating opportunities for their extended family to voice their perspectives. While most micro-entrepreneurs are likely unable to bring more family members into the business, creating opportunities for them to express their views is likely possible. This study suggests three concrete routines for doing so: a family budget, discussing investments, and general feedback. This list is not exhaustive, micro-entrepreneurs may give family members voice in a variety of other ways that may be more appropriate for those cultural contexts. Nevertheless, this study provides evidence that adopting such practices can help manage external family member claims and improve performance.

Second, this study has practical implications for how public agencies and non-profit organizations design entrepreneurship training programs in emerging markets. Many training programs take well-established practices developed in Western economies and transpose them to the Global South. In doing so, these training programs risk becoming difficult to implement or even backfiring and having unintended consequences (Pongeluppe, 2024). This study suggests that when training programs take as a starting point a local social institution that is central in the lives of entrepreneurs--in this case the family--the impact of the training may differ significantly and may be likelier to generate more enthusiasm and engagement. Given how much the training program in this study outperformed the ILO-designed program, it suggests that designers of training programs may have more success if they begin from entrepreneurs' lived experiences and design programs that respond to those experiences.

## **Limitations and Future Research**

There are important limitations and boundary conditions for this study. First, the experimental design did not include a “pure” control group that receives no training. The advantage of this design is that it creates a conservative control group, because multiple RCTs have found that business practices trainings improve entrepreneur performance (McKenzie, 2021). It also rules out potentially confounding network effects, motivational effects, or placebo effects that could be associated with attending a training. The disadvantage with this experimental design, however, is that it is impossible to know the impact of family participation training relative to receiving no training.

Importantly, while this study provides causal evidence of family participatory practices on entrepreneurial performance, the evidence of mechanisms is not exhaustive. This study shows that trust and motivation increased, while conflict and cross-domain financial flows decreased, all of which contributed to the performance effects. Although these mechanisms are empirically and theoretically sound, there may be other parallel mechanisms, such as innovation or psychological support, that may also be at work, but for which data are lacking. Future studies will hopefully take on this issue of mechanisms in a more exhaustive manner.

Related to the data, an important limitation is that surveys were only administered to entrepreneurs and not their households. While this made it possible to collect information about entrepreneurs' perceptions of their families, there are no data about family members' own perceptions and reactions. It is therefore difficult to cross-validate the extent to which families received the cash transfers that entrepreneurs claimed they made. An important next step for future studies would be to conduct surveys where the level of analysis is the household and all members are interviewed. This would enable scholars to understand in more detail the interconnections between families and businesses, and how business interventions reverberate through households.

The composition of the sample also likely represents a limitation for the external validity of the training. As shown in Table 3, female entrepreneurs are overrepresented in the sample. While other samples of entrepreneurs in Togo have reported high numbers of women (Campos et al., 2017; Dimitriadis & Koning, 2022), the number in this study is larger and is unlikely to be representative of the broader population of Togolese micro-entrepreneurs. The results in this study may be more representative of female entrepreneurs than male entrepreneurs, given the number of men in the sample. As this study demonstrated the causal impact of family participation practices hopefully other studies will go on to establish the boundary conditions of these practices with respect to gender.

Another dimension that limits the external validity of this study is the particular institutional environment in which the training was conducted: Lomé. This context is characterized by a majority ethnic group, the Ewe, whose social structure has traditionally been kin-based and for whom there is evidence that kin-based meetings and discussions are part of their tradition (Kludze, 1969). While this may have made this study's participatory training particularly impactful, it suggests that it may not be as effective among people whose cultures are not organized around kinship or do not have traditions of family engagement. Future studies should explore how the impact of participatory practices varies with kin-based cultural traditions.

This study limited data collection to short-term outcomes. It remains unclear to what extent these effects will persist after one year and whether entrepreneurs will continue to engage with their households. It seems plausible that keeping households engaged and maintaining their attention could be difficult over a prolonged period of time. Future longitudinal studies should explore the long-term implications of participatory practices on business performance and family relationships. This will help determine the sustainability of the outcomes observed in this study.

Finally, this study did not collect data on micro-entrepreneurs who signed up for the training but never attended. Due to this lack of data, it is impossible to estimate the "intent to treat" (ITT) treatment effect. Analyses show that attrition from the sample of micro-entrepreneurs who registered but never attended was balanced between the treatment and control conditions, which suggests that this attrition is unlikely to have biased the treatment estimates. Nevertheless, this attrition may have limited the generalizability of the results, since the sample of micro-entrepreneurs who attended represents those micro-entrepreneurs who were particularly motivated

to learn and improve their businesses. Future field experimental studies will hopefully build on the insights of this study to test whether these results generalize more broadly to all micro-entrepreneurs or whether a certain level of motivation is needed to make family participation practices effective.

These limitations suggest a variety of experimental interventions that organization and entrepreneurship scholars should pursue. A particularly interesting experimental intervention would involve creating a training program for the entire household. This approach to training micro-entrepreneurs could be particularly impactful if there are multiple entrepreneurs within the same household and could lead to improvements in the intra-household allocation of capital among these ventures. Another promising area for experimental interventions involves crafting training programs specifically for women micro-entrepreneurs and tailoring the participatory practices to the specific challenges they face in managing their familial obligations. Research suggests that women bear a disproportionate share of household labor and their revenues often subsidize male-owned businesses in their households (Bernhardt et al., 2019). Interventions that increase women micro-entrepreneurs' negotiating power may help improve their performance. Finally, family business research suggests that people come to identify with their businesses more when multiple generations are involved, because they come to see the business as an inheritance for future generations (Miller and Le Breton-Miller, 2006). If entrepreneurs were taught how to create roles in their businesses for future generations and plan for their succession, it might lead to performance improvements in the short run through the added commitment of family members.

## **Conclusion**

This study shows that creating opportunities for external family members to participate—via recurring budget, investment, and feedback routines—enables micro-entrepreneurs to coordinate cross-domain claims, nearly doubling investments and lifting profits. In doing so, this paper extends literatures on family business governance, embeddedness, and participation by theorizing how voice outside organizational boundaries can motivate support, build trust, and reduce conflict to improve performance. This opens new avenues for organizational research: when and where do consultative-voice routines with stakeholders outside the formal boundary substitute for or complement classic governance levers, and how do these routines diffuse and persist over time? Future work should map boundary conditions, compare stakeholder-voice designs across settings and sectors, and test longer-run spillovers for both firms and families.

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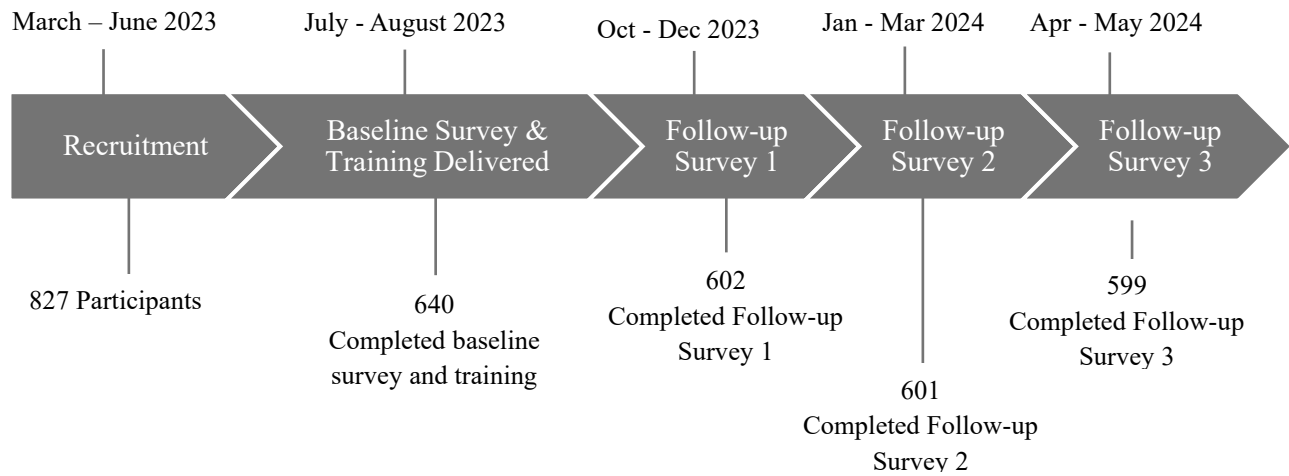
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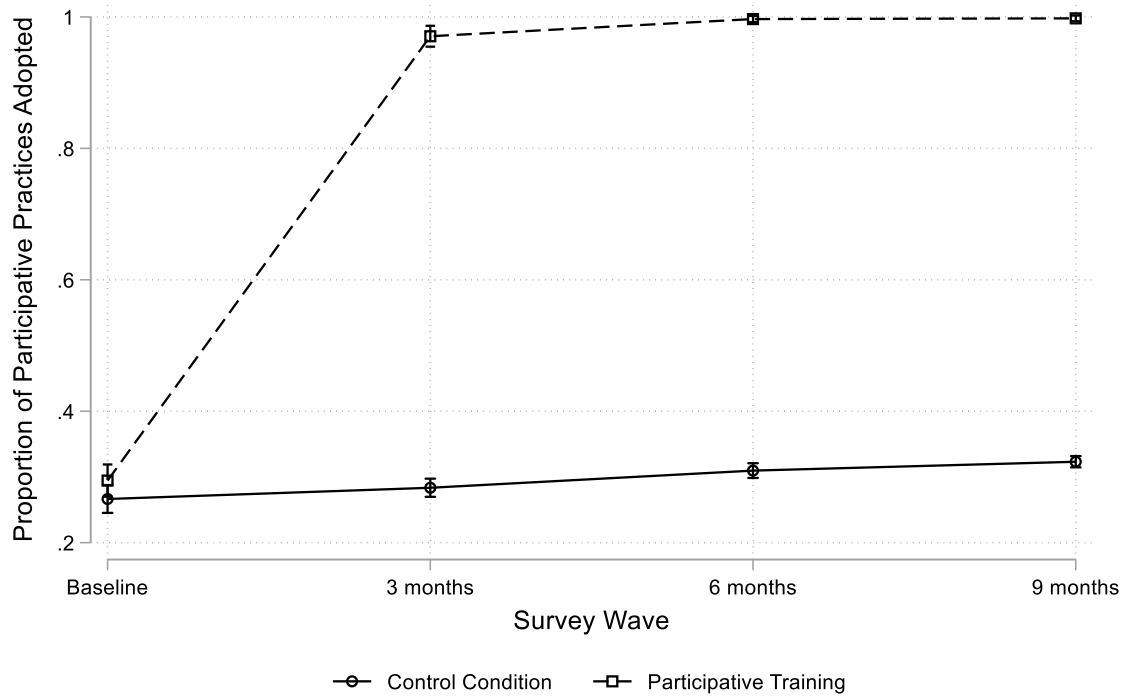
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## TABLES AND FIGURES

**Figure 1. RCT Timeline**

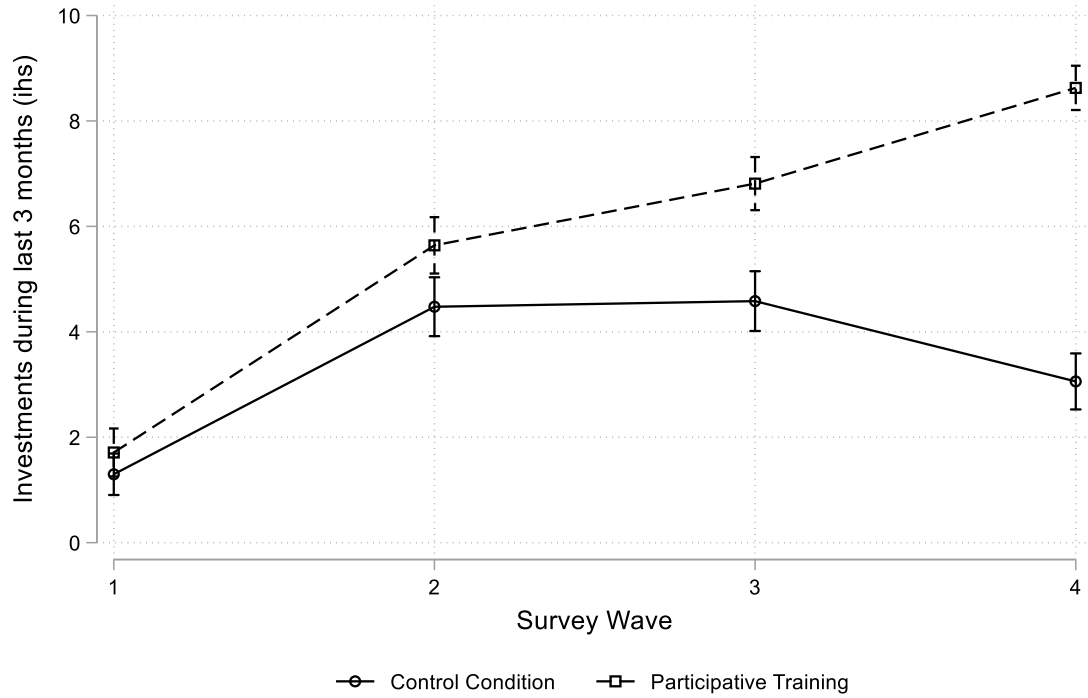


**Figure 2. Adoption of Family Participation Practices**



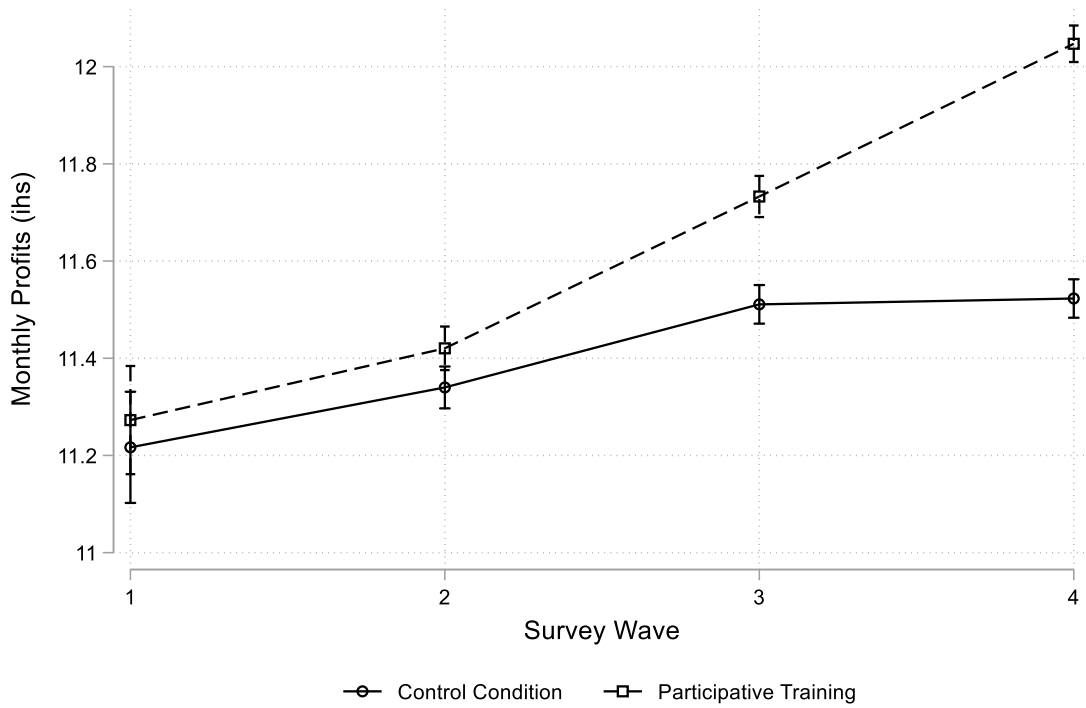
Note: The figure above plots the average proportion of participatory practices used by entrepreneurs in each survey wave by experimental condition. There are three participatory practices (household budget; discussing investments; seeking advice), the variable shown is the proportion of these used by entrepreneurs. The solid line represents the average proportion of practices used by entrepreneurs in the control condition, while the dashed line plots the average proportion of practices used by entrepreneurs in the treatment condition. The horizontal bars represent 95% confidence intervals.

**Figure 3. Family Participation Training Increases Business Investments**



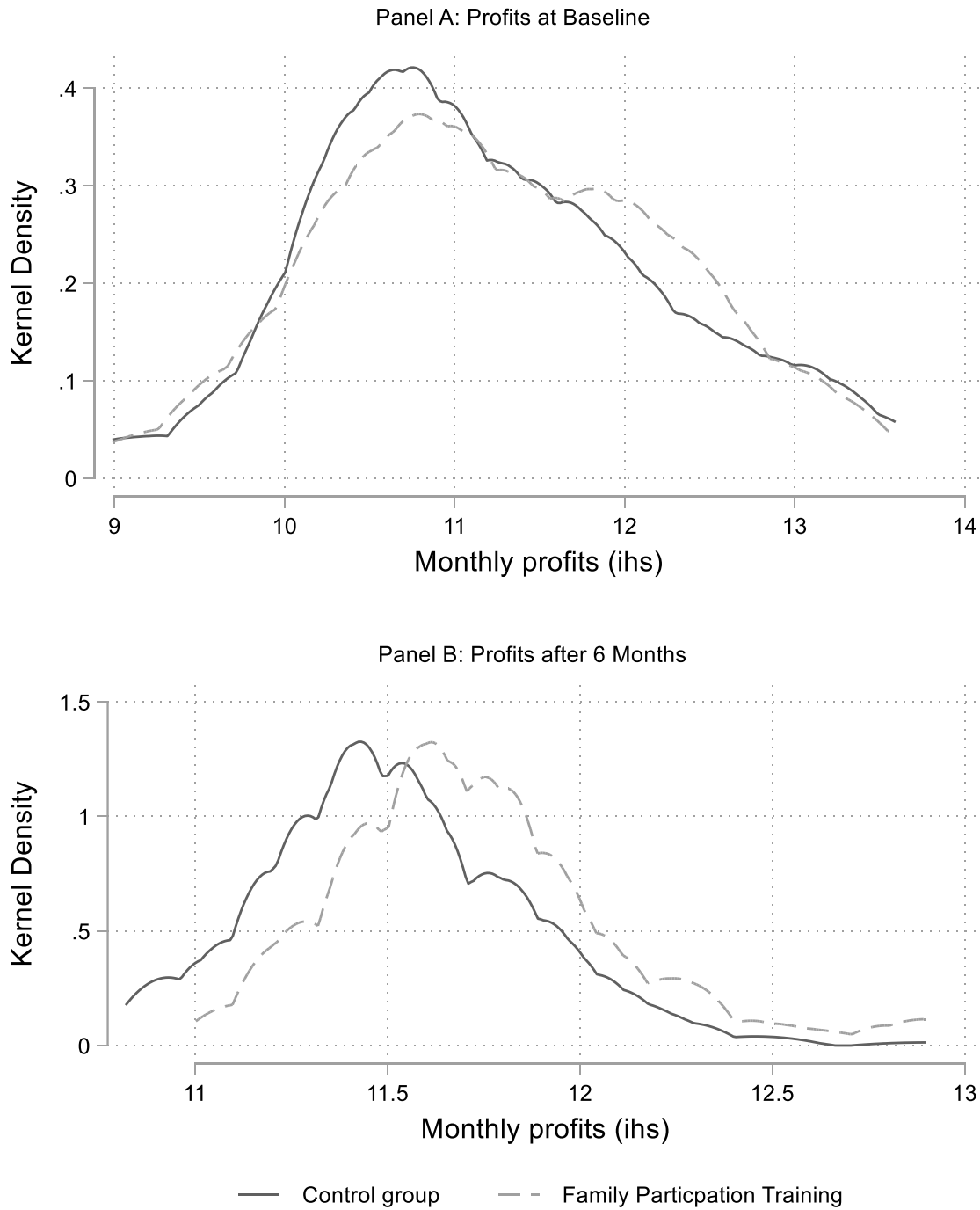
Note: The figure above plots average investments during the preceding three months. Investments are transformed using inverse hyperbolic sine (ihs) and winsorized at the 1<sup>st</sup> and 99<sup>th</sup> percentiles. Horizontal bars represent 95% confidence intervals. The solid line plots average investments by entrepreneurs in the control condition while the dashed line plots average investments by entrepreneurs in the treatment condition.

**Figure 4. Family Participation Training Increases Business Profits**



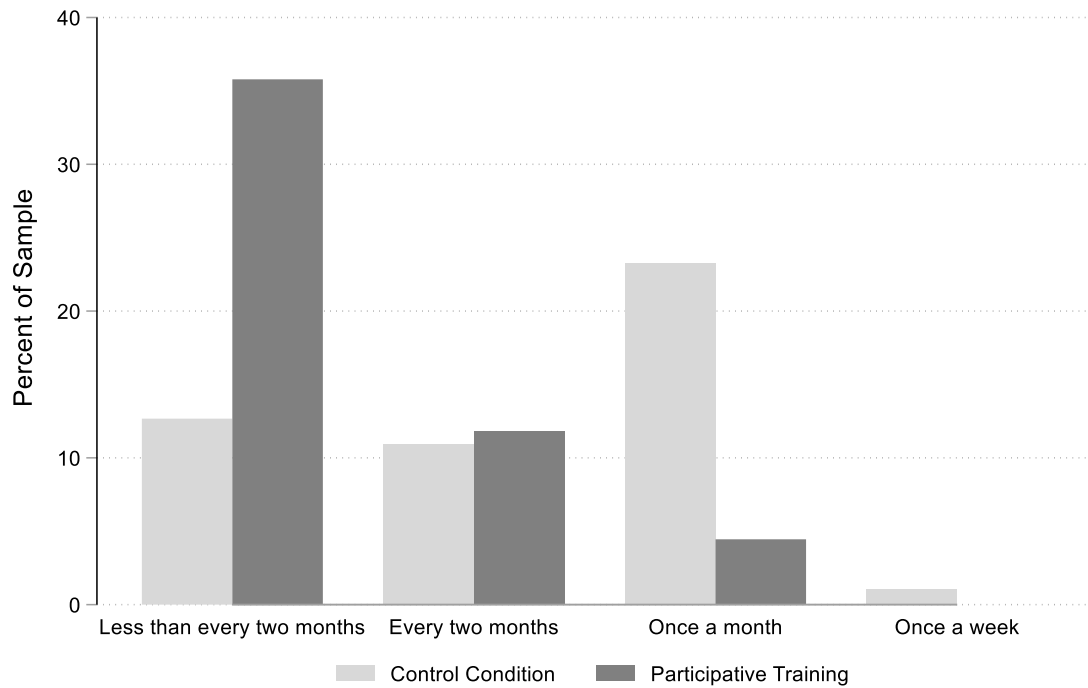
Note: The figure above plots average monthly profits by experimental condition. Monthly profits are transformed using inverse hyperbolic sine (ihs) and winsorized at the 1<sup>st</sup> and 99<sup>th</sup> percentiles. Horizontal bars represent 95% confidence intervals. The solid line plots average profits for entrepreneurs in the control condition, while the dashed line plots average profits for entrepreneurs in the treatment condition.

**Figure 5. Distribution of Profits at Baseline and after 6 Months**



Note: The figure above plots kernel density functions for average monthly profits for each experimental condition. Monthly profits are transformed using inverse hyperbolic sine (ihs) and winsorized at the 1<sup>st</sup> and 99<sup>th</sup> percentiles. Panel A shows the distributions at baseline, while Panel B shows the distribution six months after the training. The difference between plots suggests that participatory training shifted profits consistently to the right.

**Figure 6. Frequency of Conflict by Experimental Condition After 3 Months**



Note: The bars show the frequency of conflicts between entrepreneurs and family members for each experimental condition. The light grey represents entrepreneurs in the control condition, while the dark grey represents entrepreneurs in the family participation training. The bar represents the percentage of entrepreneurs in each condition who reported conflicts at each particular frequency. The bar chart suggests that disagreements in the control condition are more frequent than for the treatment group as early as three months after the training.

**Table 1. Training Programs Structure**

| Time                    | Family participation training |                                                                                                                                                                                                                                                                                                                                                                                                                                                     | Traditional business training            |                                                                                                                                                                                                                                                               |
|-------------------------|-------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                         | Topic                         | Description                                                                                                                                                                                                                                                                                                                                                                                                                                         | Topic                                    | Description                                                                                                                                                                                                                                                   |
| <b>Day 1</b>            |                               |                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                                          |                                                                                                                                                                                                                                                               |
| <b>8.00 - 10.00am</b>   | <i>Business and family</i>    | Establishes the connection between family and business performance. Defines kin, family, and household, explains the connection between family and business. Discuss how family income and expenses are defined. Discusses potential benefits of participation (e.g., reducing conflicts, promoting savings, improving family cohesion). Participants discuss the concept of a family, how entrepreneurs' families can affect business performance. | <i>Implementing management practices</i> | Entrepreneurs are introduced to the idea of standardized management practices. The importance of routines and organization are discussed. The connection between simple, but consistent practices of management and micro-business performance are discussed. |
| <b>10.00 – 10.30 am</b> | <b><i>Coffee break</i></b>    |                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                                          |                                                                                                                                                                                                                                                               |
| <b>10.30am- 1.00pm</b>  | <i>Family budget</i>          | Practical instructions for crafting a family budget: list all sources of income and expenses for the family; use a classic budgeting scheme (income vs expenses); and practice record keeping. Understand how the business' income is introduced into the family budget. Discuss how family members participate in the family budget.                                                                                                               | <i>Inventory management</i>              | Introduction to inventory management. Emphasises building an inventory list, taking stock, and planning for supplies. Keeping track of stock over time, anticipating demand. This section also emphasizes saving funds to be able to buy stock when needed.   |
| <b>1.00- 2.00pm</b>     | <b><i>Lunch</i></b>           |                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                                          |                                                                                                                                                                                                                                                               |
| <b>2.00- 6.00pm</b>     | <i>Family budget</i>          | Participants complete exercises on budgeting. Understand why balancing the household budget promotes saving, can reduce conflict and free resources for the business. Learn to adjust the family budget as circumstances change, and discuss why a dynamic household budget promotes financial stability for the                                                                                                                                    | <i>Record keeping and accounting I</i>   | Keeping registers/books of accounts, defining owners' salary and maintaining wage registers. How to record daily transactions, prepare vouchers, number and classify financial                                                                                |

|                         |                                          |                                                                                                                                                                                                                                                                                                                                                                               |                                        |                                                                                                                                                                                                                                                                                   |
|-------------------------|------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                         |                                          | family. Lecture emphasises that everyone should contribute to the budget.                                                                                                                                                                                                                                                                                                     |                                        | documents, and use a cash book.                                                                                                                                                                                                                                                   |
| <b>Day 2</b>            |                                          |                                                                                                                                                                                                                                                                                                                                                                               |                                        |                                                                                                                                                                                                                                                                                   |
| <b>8.00 - 10.00am</b>   | <i>Joint decisions about investments</i> | how disciplined household budgeting frees funds for investment. These discussions segue into jointly deciding which business investments to undertake with family members. Linking budgeting to profitability and viability of micro-enterprises; encourages joint decisions on investments.                                                                                  | <i>Record keeping and accounting 2</i> | The importance of savings for maintaining stable stock inventory and replacing aging equipment. Emphasizes rotating savings groups and microfinance institutions as mechanisms for saving. Practical exercises on renewing equipment through investments.                         |
| <b>10.00 – 10.30 am</b> | <b><i>Coffee Break</i></b>               |                                                                                                                                                                                                                                                                                                                                                                               |                                        |                                                                                                                                                                                                                                                                                   |
| <b>10.30am- 1.00pm</b>  | <i>Discussing investments</i>            | Explain that investments are important for replacing aging equipment and maintain stocks of goods. Using the family budget, determine whether there is excess income in the family that could be reinvested in the business. If not, engage family in discuss about potential investments in the business, use the budget to explore if funds could be found for investments. | <i>Marketing 1</i>                     | Introduction to customer-oriented marketing. This involves building relationships with customers by engaging them, talking to them, and asking for feedback from them. Understanding the power of word-of-mouth, improving products and packaging, building trust with customers. |
| <b>1.00- 2.00pm</b>     | <b><i>Lunch</i></b>                      |                                                                                                                                                                                                                                                                                                                                                                               |                                        |                                                                                                                                                                                                                                                                                   |
| <b>2.00- 4.00pm</b>     | <i>Advice and feedback</i>               | Asking family members for ideas and feedback about any aspect of the business. Encourage entrepreneurs to solicit ideas and feedback from family members to improve decisions and increase family engagement.                                                                                                                                                                 | <i>Marketing 2</i>                     | The basics of digital marketing. The training emphasizes maintaining relationships with customers and using their insights to improve the business.                                                                                                                               |
| <b>4.00-6pm</b>         | <b>Discussion, Q&amp;A, and Wrap-Up</b>  |                                                                                                                                                                                                                                                                                                                                                                               |                                        |                                                                                                                                                                                                                                                                                   |

**Table 2. Comparing Training Programs**

| <b>Overlapping themes</b>                                                                                                                                                                                                                                                                                                                                           | <b>Unique elements of family participation training</b>                                                                                                                                                                                        | <b>Unique elements of traditional business training</b>                                                                                                                                                                                                             |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <p><b>Financial planning, budgeting, and literacy:</b> Both trainings taught participants to plan and track financial flows. The participatory program focused on a <i>family budget</i>, while the control program covered budgeting for the business. Both trainings taught how to keep records and how to use them to budget and plan ahead.</p>                 | <p><b>Emphasizing the family's role:</b> The participatory training tied family well-being to business performance, teaching that budgeting can take place at the family level, taking into account all family members' needs and incomes.</p> | <p><b>Management routines:</b> the control training devoted substantial time to implementing management practices and techniques for organising budgets and financial plans in micro-enterprises. The emphasis was on the business as distinct from the family.</p> |
| <p><b>Savings and investments:</b> Both trainings highlighted the importance of saving and investing. The family training linked savings to the household budget and discussed reinvesting profits in the business, whereas the control training linked savings and investments to the business budget, rotating savings groups, and microfinance institutions.</p> | <p><b>Joint decision-making:</b> entrepreneurs were trained to jointly decide with family on reinvestments and to seek their advice and feedback, giving family members a voice in the business.</p>                                           | <p><b>Accounting &amp; record keeping:</b> The control training provided detailed instruction on maintaining books of accounts, cash books, salary registers and other financial records.</p>                                                                       |
| <p><b>Advice:</b> Both programs emphasized obtaining feedback. The participatory training taught entrepreneurs to solicit advice from family members, while the control training discussed gathering customer feedback through marketing and peer feedback from industry associations.</p>                                                                          | <p><b>Family cohesion and conflict reduction:</b> participatory practices emphasized how seeking family input can give family members an opportunity to express their views.</p>                                                               | <p><b>Marketing:</b> the control program included a module on marketing that emphasized seeking advice from customers. This training also touched on communication strategies with peer entrepreneurs.</p>                                                          |

**Table 3. Summary Statistics at Baseline**

|                                 | Mean   | Std.<br>Dev. | Min    | p25    | Median | p75    | Max    |
|---------------------------------|--------|--------------|--------|--------|--------|--------|--------|
| Family participation training   | 0.516  | 0.500        | 0      | 0      | 1      | 1      | 1      |
| Family budget                   | 0.071  | 0.257        | 0      | 0      | 0      | 0      | 1      |
| Discussed investments           | 0.064  | 0.245        | 0      | 0      | 0      | 0      | 1      |
| Family advice and feedback      | 0.710  | 0.454        | 0      | 0      | 1      | 1      | 1      |
| Average participatory practices | 0.282  | 0.209        | 0      | 0      | 0.333  | 0.333  | 1      |
| Investments (ihs)               | 1.471  | 3.837        | 0      | 0      | 0      | 0      | 15.703 |
| Profits monthly (ihs)           | 11.260 | 1.026        | 8.987  | 10.597 | 11.156 | 11.983 | 13.592 |
| Performance index               | 0.013  | 0.910        | -0.720 | -0.549 | -0.363 | 0.137  | 4.851  |
| Ewe ethnicity                   | 0.722  | 0.449        | 0      | 0      | 1      | 1      | 1      |
| Christian                       | 0.728  | 0.445        | 0      | 0      | 1      | 1      | 1      |
| Female                          | 0.761  | 0.427        | 0      | 1      | 1      | 1      | 1      |
| Married                         | 0.622  | 0.485        | 0      | 0      | 1      | 1      | 1      |
| Education level                 | 3.091  | 1.206        | 1      | 3      | 3      | 3      | 5      |
| Kin involved in business        | 1.761  | 1.165        | 1      | 1      | 1      | 2      | 9      |
| Firm age                        | 9.245  | 8.040        | 1      | 3      | 6      | 13     | 48     |
| Management practices score      | 0.513  | 0.180        | 0      | 0.385  | 0.500  | 0.615  | 1      |
| Cohort size                     | 33.911 | 14.140       | 6      | 23     | 36     | 40     | 64     |

*N* = 593

**Table 4. Balance Table**

|                                 | Total<br>Sample   | Control<br>Condition | Family Participation<br>Training | Mean<br>difference | t-stat | p-value |
|---------------------------------|-------------------|----------------------|----------------------------------|--------------------|--------|---------|
|                                 | (1)               | (2)                  | (3)                              | (4)                | (5)    | (6)     |
| Family Budget                   | 0.071<br>(0.019)  | 0.052<br>(0.016)     | 0.088<br>(0.035)                 | -0.036             | -0.963 | 0.346   |
| Discussed Investments           | 0.064<br>(0.019)  | 0.038<br>(0.014)     | 0.088<br>(0.035)                 | -0.05              | -1.356 | 0.188   |
| Family Advice and Feedback      | 0.71<br>(0.043)   | 0.718<br>(0.071)     | 0.703<br>(0.054)                 | 0.015              | 0.174  | 0.863   |
| Average Participatory Practices | 0.282<br>(0.016)  | 0.269<br>(0.023)     | 0.293<br>(0.024)                 | -0.024             | -0.716 | 0.481   |
| Investments (ihs)               | 1.463<br>(0.293)  | 1.339<br>(0.400)     | 1.58<br>(0.437)                  | -0.241             | -0.416 | 0.681   |
| Profits monthly (ihs)           | 11.26<br>(0.064)  | 11.257<br>(0.106)    | 11.263<br>(0.081)                | -0.006             | -0.043 | 0.966   |
| Performance Index               | 0.007<br>(0.041)  | -0.061<br>(0.073)    | 0.071<br>(0.045)                 | -0.132             | -1.586 | 0.127   |
| Ewe ethnicity                   | 0.722<br>(0.061)  | 0.714<br>(0.077)     | 0.729<br>(0.096)                 | -0.014             | -0.12  | 0.906   |
| Christian                       | 0.728<br>(0.044)  | 0.739<br>(0.038)     | 0.719<br>(0.078)                 | 0.02               | 0.231  | 0.819   |
| Female                          | 0.761<br>(0.030)  | 0.749<br>(0.048)     | 0.771<br>(0.038)                 | -0.022             | -0.371 | 0.714   |
| Married                         | 0.622<br>(0.033)  | 0.596<br>(0.041)     | 0.647<br>(0.052)                 | -0.051             | -0.789 | 0.438   |
| Education level                 | 3.091<br>(0.097)  | 3.226<br>(0.090)     | 2.964<br>(0.164)                 | 0.262              | 1.432  | 0.165   |
| Family involved in business     | 1.761<br>(0.069)  | 1.735<br>(0.115)     | 1.784<br>(0.080)                 | -0.049             | -0.358 | 0.724   |
| Firm age                        | 9.245<br>(0.462)  | 9.136<br>(0.474)     | 9.346<br>(0.801)                 | -0.211             | -0.23  | 0.82    |
| Management practices score      | 0.513<br>(0.010)  | 0.519<br>(0.015)     | 0.507<br>(0.015)                 | 0.012              | 0.6    | 0.554   |
| Cohort size                     | 33.911<br>(3.661) | 37.561<br>(6.496)    | 30.487<br>(3.318)                | 7.074              | 0.997  | 0.329   |
| Agricultural products sector    | 0.019<br>(0.008)  | 0.01<br>(0.005)      | 0.026<br>(0.015)                 | -0.016             | -1.018 | 0.319   |
| Construction sector             | 0.061<br>(0.012)  | 0.056<br>(0.019)     | 0.065<br>(0.016)                 | -0.01              | -0.392 | 0.699   |
| Light manufacturing sector      | 0.128<br>(0.018)  | 0.111<br>(0.019)     | 0.144<br>(0.030)                 | -0.032             | -0.918 | 0.368   |
| Services sector                 | 0.123<br>(0.014)  | 0.139<br>(0.014)     | 0.108<br>(0.022)                 | 0.032              | 1.207  | 0.24    |

|                           |                  |                  |                  |       |       |       |
|---------------------------|------------------|------------------|------------------|-------|-------|-------|
| Retail sales sector       | 0.582<br>(0.026) | 0.582<br>(0.025) | 0.582<br>(0.045) | 0     | 0.004 | 0.997 |
| Hotels/restaurants sector | 0.088<br>(0.014) | 0.101<br>(0.023) | 0.075<br>(0.017) | 0.026 | 0.91  | 0.372 |
| Sample size               | 593              | 287              | 306              |       |       |       |

Note: Mean difference is tested using t-test, significance: \*\*\*=0.01, \*\*=0.05, \*=0.1. Standard errors in parentheses, clustered at cohort level. ihs = inverse hyperbolic sine.

**Table 5. Training leads to adoption of participatory practices**

|                               | Family Budget      |                    | Discussed Investments |                    | Family Advice and Feedback |                                | Ave. Participatory Practices |                    |
|-------------------------------|--------------------|--------------------|-----------------------|--------------------|----------------------------|--------------------------------|------------------------------|--------------------|
|                               | (1)                | (2)                | (3)                   | (4)                | (5)                        | (6)                            | (7)                          | (8)                |
| Family Participation Training | 0.983**<br>(0.008) | 0.982**<br>(0.009) | 0.983**<br>(0.008)    | 0.982**<br>(0.009) | 0.059**<br>(0.014)         | 0.060**<br>(0.013)             | 0.675**<br>(0.006)           | 0.675**<br>(0.007) |
| Ewe ethnicity                 |                    | -0.006<br>(0.006)  |                       | -0.006<br>(0.006)  |                            | -0.014 <sup>+</sup><br>(0.007) |                              | -0.008*<br>(0.004) |
| Christian                     |                    | -0.007<br>(0.004)  |                       | -0.007<br>(0.004)  |                            | 0.013<br>(0.011)               |                              | -0.000<br>(0.005)  |
| Female                        |                    | 0.006<br>(0.009)   |                       | 0.005<br>(0.009)   |                            | 0.011<br>(0.014)               |                              | 0.008<br>(0.007)   |
| Married                       |                    | 0.001<br>(0.006)   |                       | 0.001<br>(0.006)   |                            | -0.012<br>(0.008)              |                              | -0.003<br>(0.005)  |
| Education level               |                    | -0.002<br>(0.002)  |                       | -0.002<br>(0.002)  |                            | 0.002<br>(0.004)               |                              | -0.000<br>(0.002)  |
| Kin involved in business      |                    | 0.002<br>(0.002)   |                       | 0.002<br>(0.002)   |                            | -0.005 <sup>+</sup><br>(0.003) |                              | -0.000<br>(0.002)  |
| Firm age                      |                    | 0.000<br>(0.000)   |                       | 0.000<br>(0.000)   |                            | 0.000<br>(0.000)               |                              | 0.000<br>(0.000)   |
| Management practices score    |                    | -0.010<br>(0.010)  |                       | -0.009<br>(0.010)  |                            | 0.014<br>(0.032)               |                              | -0.000<br>(0.013)  |
| Cohort size                   |                    | -0.000<br>(0.000)  |                       | -0.000<br>(0.000)  |                            | -0.000<br>(0.001)              |                              | -0.000<br>(0.000)  |
| Community FE                  | Yes                | Yes                | Yes                   | Yes                | Yes                        | Yes                            | Yes                          | Yes                |
| Sector FE                     | Yes                | Yes                | Yes                   | Yes                | Yes                        | Yes                            | Yes                          | Yes                |
| Survey wave FE                | Yes                | Yes                | Yes                   | Yes                | Yes                        | Yes                            | Yes                          | Yes                |
| Observations                  | 1762               | 1762               | 1762                  | 1762               | 1762                       | 1762                           | 1762                         | 1762               |
| Entrepreneurs                 | 593                | 593                | 593                   | 593                | 593                        | 593                            | 593                          | 593                |
| $R^2$                         | 0.971              | 0.971              | 0.971                 | 0.971              | 0.067                      | 0.073                          | 0.948                        | 0.948              |

Note: The sample includes only post-treatment time periods. All models control for baseline value of outcome variable.  
Robust standard errors clustered by training cohort.

<sup>+</sup>  $p < 0.10$ , \*  $p < 0.05$ , \*\*  $p < 0.01$

**Table 6. Participatory Practices Increase Investments and Performance**

|                               | Investments (lhs)  |                                | Profits monthly<br>(rhs) |                               | Performance index  |                               |
|-------------------------------|--------------------|--------------------------------|--------------------------|-------------------------------|--------------------|-------------------------------|
|                               | (1)                | (2)                            | (3)                      | (4)                           | (5)                | (6)                           |
| Family Participation Training | 2.169**<br>(0.489) | 2.074**<br>(0.542)             | 0.279**<br>(0.048)       | 0.261**<br>(0.036)            | 0.227**<br>(0.042) | 0.216**<br>(0.036)            |
| Ewe ethnicity                 |                    | 0.108<br>(0.277)               |                          | -0.034<br>(0.032)             |                    | -0.021<br>(0.036)             |
| Christian                     |                    | -0.067<br>(0.233)              |                          | -0.012<br>(0.027)             |                    | -0.041<br>(0.036)             |
| Female                        |                    | -0.562 <sup>+</sup><br>(0.310) |                          | -0.136**<br>(0.033)           |                    | -0.090**<br>(0.026)           |
| Married                       |                    | 0.641*<br>(0.272)              |                          | 0.083*<br>(0.033)             |                    | 0.086**<br>(0.029)            |
| Education level               |                    | -0.019<br>(0.117)              |                          | 0.032 <sup>+</sup><br>(0.017) |                    | 0.058**<br>(0.016)            |
| Kin involved in business      |                    | 0.070<br>(0.096)               |                          | 0.032*<br>(0.013)             |                    | 0.021<br>(0.014)              |
| Firm age                      |                    | 0.019 <sup>+</sup><br>(0.011)  |                          | 0.007**<br>(0.002)            |                    | 0.005**<br>(0.002)            |
| Management practices score    |                    | 1.873*<br>(0.887)              |                          | 0.162*<br>(0.078)             |                    | 0.142 <sup>+</sup><br>(0.079) |
| Cohort size                   |                    | -0.008<br>(0.019)              |                          | -0.003*<br>(0.001)            |                    | -0.003*<br>(0.001)            |
| Community FE                  | Yes                | Yes                            | Yes                      | Yes                           | Yes                | Yes                           |
| Sector FE                     | Yes                | Yes                            | Yes                      | Yes                           | Yes                | Yes                           |
| Survey wave FE                | Yes                | Yes                            | Yes                      | Yes                           | Yes                | Yes                           |
| Observations                  | 1762               | 1762                           | 1762                     | 1762                          | 1762               | 1762                          |
| Entrepreneurs                 | 593                | 593                            | 593                      | 593                           | 593                | 593                           |
| $R^2$                         | 0.203              | 0.214                          | 0.367                    | 0.431                         | 0.368              | 0.423                         |

Note: The sample includes only post-treatment time periods. All models control for baseline value of outcome variable. Robust standard errors clustered by training cohort.

<sup>+</sup>  $p < 0.10$ , \*  $p < 0.05$ , \*\*  $p < 0.01$

**Table 7. Which practices mediate the training's effects?**

| Mediator                     | Investments  |                 | Profits      |                |
|------------------------------|--------------|-----------------|--------------|----------------|
|                              | ACME<br>mean | 95% CI          | ACME<br>mean | 95% CI         |
|                              | (1)          | (2)             | (3)          | (4)            |
| Family budget                | 1.837        | [0.735, 2.875]  | 0.357        | [0.282, 0.422] |
| Discussed investments        | 1.837        | [0.735, 2.875]  | 0.357        | [0.282, 0.422] |
| Family Advice and Feedback   | 0.029        | [-0.038, 0.052] | 0.007        | [0.005, 0.008] |
| Ave. Participatory Practices | 1.603        | [0.505, 2.614]  | 0.320        | [0.276, 0.361] |

Note: Estimates for family budget and discussed investments are numerically identical, so both practices mediate the same share of the treatment effect. Confidence intervals come from 1 000 Monte-Carlo simulations and are cluster-robust. ACME = average causal mediation effect.

**Table 8. Exploring Mechanisms**

|                               | Family Motivation  |                     | Trust in Family    |                    | Frequency of Disagreements |                     | Cross-Domain Financial Flows |                     |
|-------------------------------|--------------------|---------------------|--------------------|--------------------|----------------------------|---------------------|------------------------------|---------------------|
|                               | (1)                | (2)                 | (3)                | (4)                | (5)                        | (6)                 | (7)                          | (8)                 |
| Family Participation Training | 1.000**<br>(0.082) | 1.015**<br>(0.082)  | 1.565**<br>(0.076) | 1.539**<br>(0.086) | -0.963**<br>(0.067)        | -0.998**<br>(0.066) | -0.196**<br>(0.011)          | -0.193**<br>(0.011) |
| Ewe ethnicity                 |                    | -0.113**<br>(0.030) |                    | -0.048<br>(0.042)  |                            | 0.165**<br>(0.041)  |                              | 0.008<br>(0.006)    |
| Christian                     |                    | 0.094+<br>(0.051)   |                    | 0.099<br>(0.059)   |                            | -0.100*<br>(0.042)  |                              | -0.013<br>(0.009)   |
| Female                        |                    | -0.036<br>(0.057)   |                    | -0.013<br>(0.063)  |                            | 0.055<br>(0.065)    |                              | -0.021+<br>(0.011)  |
| Married                       |                    | 0.046<br>(0.036)    |                    | 0.001<br>(0.037)   |                            | 0.003<br>(0.036)    |                              | -0.012<br>(0.009)   |
| Education level               |                    | -0.025<br>(0.034)   |                    | -0.033<br>(0.039)  |                            | 0.023<br>(0.032)    |                              | -0.001<br>(0.004)   |
| Kin involved in business      |                    | 0.001<br>(0.016)    |                    | 0.021<br>(0.015)   |                            | -0.027<br>(0.018)   |                              | 0.000<br>(0.003)    |
| Firm age                      |                    | 0.003<br>(0.003)    |                    | 0.001<br>(0.003)   |                            | -0.001<br>(0.002)   |                              | 0.000<br>(0.000)    |
| Management practices score    |                    | 0.142+<br>(0.083)   |                    | 0.093<br>(0.080)   |                            | -0.072<br>(0.092)   |                              | -0.058**<br>(0.017) |
| Cohort size                   |                    | 0.001<br>(0.003)    |                    | -0.003<br>(0.003)  |                            | -0.002<br>(0.002)   |                              | 0.000<br>(0.000)    |
| Community FE                  | Yes                | Yes                 | Yes                | Yes                | Yes                        | Yes                 | Yes                          | Yes                 |
| Sector FE                     | Yes                | Yes                 | Yes                | Yes                | Yes                        | Yes                 | Yes                          | Yes                 |
| Survey wave FE                | Yes                | Yes                 | Yes                | Yes                | Yes                        | Yes                 | Yes                          | Yes                 |
| Observations                  | 1762               | 1762                | 1762               | 1762               | 1762                       | 1762                | 1181                         | 1181                |
| Entrepreneurs                 | 593                | 593                 | 593                | 593                | 593                        | 593                 | 592                          | 592                 |
| $R^2$                         | 0.431              | 0.440               | 0.575              | 0.580              | 0.430                      | 0.442               | 0.477                        | 0.488               |

Note: The sample includes only post-treatment time periods. Models 1, 2, 5, and 6 control for baseline value of outcome variable. The outcomes in Models 3, 4, 7, and 8 were only collected during follow-up surveys, so there are baseline values are not controlled.

+  $p < 0.10$ , \*  $p < 0.05$ , \*\*  $p < 0.01$

**Table 9. Causal mediation estimates for Investments and Profits**

| Mediator                     | Investment |                | Profits |                |
|------------------------------|------------|----------------|---------|----------------|
|                              | ACME       | 95% CI         | ACME    | 95% CI         |
|                              | (1)        | (2)            | (3)     | (4)            |
| Family Motivation            | 1.027      | [0.470, 1.607] | 0.109   | [0.062, 0.160] |
| Trust in Family              | 2.371      | [1.716, 3.045] | 0.198   | [0.145, 0.253] |
| Frequency of Disagreements   | 1.009      | [0.690, 1.354] | 0.116   | [0.081, 0.154] |
| Cross-domain Financial Flows | 3.077      | [2.179, 4.035] | 0.229   | [0.183, 0.275] |

Note: Estimates for family budget and discussed investments are numerically identical, so both practices mediate the same share of the treatment effect. Confidence intervals come from 1 000 Monte-Carlo simulations and are cluster-robust. ACME = average causal mediation effect.

**Table 10. How Micro-entrepreneurs Reference Family in Business Changes**

| Theme                                                         | Theme Description                                                                                                                                                                                                                                                                                                                       | Example response                                                           | Prevalence of theme |
|---------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------|---------------------|
| Improved family collaboration or communication about business | The entrepreneur reports better coordination, communication, or unity with family members regarding the business. This may involve fewer misunderstandings, more alignment around business goals, or less conflict over business decisions.                                                                                             | <i>“Better family relationships for the success of my business”</i>        | 73.6%               |
| Increased support from family (spouse, parents, general)      | The entrepreneur perceives that their family members (often specifically spouses, parents, children, or siblings) now offer more encouragement, understanding, financial backing, or emotional support for the business. This may not reflect direct involvement in operations but rather a shift in attitude, trust, or encouragement. | <i>“Support from my family in my work (morally and financially)”</i>       | 17.4%               |
| Training or education of family                               | The entrepreneur has shown family members how the business works by sharing information about business tasks and involving them in decision-making.                                                                                                                                                                                     | <i>“Involving my children in my business so they understand what I do”</i> | 9%                  |

**Table 11. Heterogeneity analyses**

|                                                        | Monthly Profits (ihs) |                     |                    |                     |
|--------------------------------------------------------|-----------------------|---------------------|--------------------|---------------------|
|                                                        | (1)                   | (2)                 | (3)                | (4)                 |
| Family Participation Training                          | 0.327**<br>(0.050)    | 0.304**<br>(0.044)  | 0.335**<br>(0.065) | 0.314**<br>(0.046)  |
| Family Participation Training X Household Income (ihs) | -0.008*<br>(0.004)    | -0.007+<br>(0.004)  |                    |                     |
| Household Income (ihs)                                 | 0.006<br>(0.003)      | 0.005<br>(0.003)    |                    |                     |
| Family Participation Training x Household Illness      |                       |                     | 0.107*<br>(0.041)  | 0.117**<br>(0.036)  |
| Household Illness                                      |                       |                     | 0.018<br>(0.040)   | -0.005<br>(0.038)   |
| Ewe ethnicity                                          |                       | -0.042<br>(0.030)   |                    | -0.069*<br>(0.031)  |
| Christian                                              |                       | -0.002<br>(0.025)   |                    | 0.013<br>(0.030)    |
| Female                                                 |                       | -0.122**<br>(0.033) |                    | -0.149**<br>(0.032) |
| Married                                                |                       | 0.083*<br>(0.034)   |                    | 0.071*<br>(0.031)   |
| Education level                                        |                       | 0.031+<br>(0.017)   |                    | 0.014<br>(0.015)    |
| Kin involved in business                               |                       | 0.032*<br>(0.012)   |                    | 0.033*<br>(0.013)   |
| Firm age                                               |                       | 0.007**<br>(0.002)  |                    | 0.006**<br>(0.002)  |
| Management practices score                             |                       | 0.150+<br>(0.079)   |                    | 0.205*<br>(0.082)   |
| Cohort size                                            |                       | -0.002+<br>(0.001)  |                    | -0.003+<br>(0.001)  |
| Community FE                                           | Yes                   | Yes                 | Yes                | Yes                 |
| Sector FE                                              | Yes                   | Yes                 | Yes                | Yes                 |
| Survey wave FE                                         | Yes                   | Yes                 | Yes                | Yes                 |
| Observations                                           | 1702                  | 1702                | 1181               | 1181                |
| Entrepreneurs                                          | 571                   | 571                 | 592                | 592                 |
| R <sup>2</sup>                                         | 0.375                 | 0.434               | 0.346              | 0.419               |

Note: Household income is transformed using inverse hyperbolic sine (ihs), observations at baseline are missing for 22 participants, accounting for the smaller sample size. Data on unexpected illness or death in the household were only collected in the last two survey waves, which accounts for the smaller sample size in models 3 and 4. All models control for baseline value of outcome variable. Standard errors are clustered at the training cohort level. +  $p < 0.10$ , \*  $p < 0.05$ , \*\*  $p < 0.01$

## **Online Appendix**

### **Family Participation: Giving voice to family members increases entrepreneurial performance**

Oct 2, 2025

|             |                                                                               |
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| Appendix 15 | Training Materials                                                            |

## **Appendix 1: Lomé, Togo, and the Training Program**

This study is set in Lomé, the capital of Togo. Togo is a relatively small West African country, which until 1960 was a French colony. After a brief period of democracy the government transitioned into an authoritarian dictatorship, which persists until the present day. In part due to this dictatorship Togo was ostracized from international aid and international non-governmental organizations for many years. Togo's relationship with Europe and China has improved in recent decades leading to steady economic growth and institutional reforms that have improved the business environment. In 2020 Togo ranked 7<sup>th</sup> among sub-Saharan countries in the World Bank's "Ease of Doing Business" index. These conditions have created new economic opportunities for entrepreneurs and demand for entrepreneurship training programs.

This study explores two training programs for entrepreneurs that were delivered in Lomé in 2023. The focal program was a "participative training" and the control condition was a "traditional business training." The participative training program was developed by the author in collaboration with a Togolese consulting group, "Cabinet Cercle de Formation Épanouissement." Discussions between the author and the consulting firm began in 2022 and proceeded to a series of focus groups with entrepreneurs who were asked about what kind of training they would find most helpful. Entrepreneurs suggested many topics for which educational programs already existed (e.g. networking and English language), but also expressed a need for training that would address family involvement in businesses. Entrepreneurs expressed difficulty in managing finances with their households and creating a more formal management system when family members were involved. Based on this feedback the author turned to existing research on participative management practices. Through discussions with the Togolese consulting group, this research on participative management was translated into three simple practices that aligned with the spirit of participative management but were suited to the local Togolese context and were geared towards managing family members. An initial draft of the training was developed and shared with local entrepreneurship educators in Togo, who provided minor feedback and suggested edits. After incorporating these edits, the author, working with the local consulting firm, hired three instructors who had experience teaching entrepreneurship programs in Togo. In particular, these instructors had taught entrepreneurship programs at the University of Lomé, a local technical college, and in World Bank programs in Togo. In March 2023 they were trained by the consulting firm on how to deliver the new "participative" program.

These same instructors were also asked to teach a "traditional business practices" program to entrepreneurs. The author selected accounting, inventory management, and marketing as the traditional topics to be covered during this training. The materials used to teach this program were based on the International Labour Organization's "Start and Improve Your Business." This educational program has been extensively taught to entrepreneurs globally (McKenzie et al.,

2021). The instructors had experience teaching these topics and therefore did not need additional training for this program.

To implement the randomized control trial, the author and the consulting firm partnered with a Togolese non-profit organization, “Energy Generation.” This nonprofit regularly organizes and hosts training programs for entrepreneurs in Lomé. After discussing the content of the training and the purpose of the RCT, the nonprofit agreed to help implement it. They organized the classrooms for the training program and helped with recruitment of participants.

We chose three different locations throughout the city to host the training program to facilitate access for entrepreneurs, which would in turn reduce attrition and non-compliance. The three instructors taught all classes together. This helped facilitate classes and ensure they rolled out smoothly. One instructor was a member of the Kabye ethnic group and the other two were members of the Ewe ethnic group. This ensured that classes could be taught in French and Ewe, and translated into Kabye when needed. The courses were therefore taught in a multilingual and inclusive fashion.

Figure A1.1: Entrepreneurs in one of the training cohorts



Figure A1.2: Entrepreneurs having a discussion during class



Figure A1.3: Entrepreneurs listening to a lecture



## Appendix 2: Correlation Table

Table A2.1 displays the pairwise correlation matrix for variables used in the main analyses in the paper. The correlation is calculated for the baseline values of the variables.

Table A2.1: Correlation Table

|                                   | 1      | 2      | 3      | 4      | 5      | 6      | 7      | 8      | 9      | 10     | 11     | 12     | 13     | 14     | 15     | 16     |
|-----------------------------------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| 1 Family Participation Training   |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |
| 2 Drafted Household Budget        | 0.070  |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |
| 3 Discussed Investments           | 0.102  | 0.840  |        |        |        |        |        |        |        |        |        |        |        |        |        |        |
| 4 Family Advice and Feedback      | -0.017 | -0.113 | -0.091 |        |        |        |        |        |        |        |        |        |        |        |        |        |
| 5 Average Participatory Practices | 0.057  | 0.657  | 0.671  | 0.644  |        |        |        |        |        |        |        |        |        |        |        |        |
| 6 Investments (ihs)               | 0.032  | 0.367  | 0.307  | -0.008 | 0.265  |        |        |        |        |        |        |        |        |        |        |        |
| 7 Profits monthly (ihs)           | 0.003  | 0.019  | -0.005 | -0.008 | 0.001  | -0.061 |        |        |        |        |        |        |        |        |        |        |
| 8 Performance Index               | 0.089  | 0.136  | 0.108  | 0.019  | 0.112  | 0.061  | 0.879  |        |        |        |        |        |        |        |        |        |
| 9 Ewe ethnicity                   | 0.016  | 0.010  | -0.007 | 0.001  | 0.002  | 0.041  | -0.047 | -0.016 |        |        |        |        |        |        |        |        |
| 10 Christian                      | -0.022 | -0.068 | -0.073 | 0.111  | 0.024  | 0.061  | -0.030 | -0.001 | -0.024 |        |        |        |        |        |        |        |
| 11 Female                         | 0.026  | -0.122 | -0.063 | 0.042  | -0.044 | -0.168 | -0.020 | -0.045 | -0.128 | -0.041 |        |        |        |        |        |        |
| 12 Married                        | 0.053  | 0.039  | 0.019  | 0.000  | 0.024  | 0.031  | 0.067  | 0.069  | -0.096 | -0.085 | 0.158  |        |        |        |        |        |
| 13 Education level                | -0.109 | -0.021 | -0.037 | 0.206  | 0.126  | 0.111  | -0.099 | -0.107 | -0.094 | 0.364  | -0.351 | -0.282 |        |        |        |        |
| 14 Family involved in business    | 0.021  | -0.005 | 0.030  | 0.006  | 0.014  | 0.064  | -0.060 | 0.010  | 0.002  | -0.100 | 0.031  | -0.056 | -0.091 |        |        |        |
| 15 Firm age                       | 0.013  | 0.021  | 0.008  | -0.184 | -0.122 | -0.042 | 0.041  | 0.042  | 0.110  | -0.285 | -0.013 | 0.078  | -0.359 | 0.145  |        |        |
| 16 Management practices score     | -0.034 | 0.177  | 0.142  | 0.290  | 0.339  | 0.327  | 0.068  | 0.201  | 0.043  | 0.147  | -0.204 | -0.045 | 0.316  | 0.048  | -0.156 |        |
| 17 Cohort size                    | -0.250 | -0.217 | -0.199 | 0.183  | -0.034 | -0.230 | 0.103  | -0.021 | 0.040  | -0.068 | 0.132  | 0.036  | -0.010 | -0.162 | -0.097 | -0.095 |

N = 593

### Appendix 3: Participatory Practices and Family Relationships

In the main paper, Figure 2 and the regression results in Table 5 provide insights about the rate of adoption for each practice, as well as average adoption of all three practices. To gain more insight into the proportion of the three practices adopted by entrepreneurs in each treatment condition, Figure A3.1 and Figure A3.2 plot the distribution of the number of participatory practices adopted at baseline (Figure A3.1) and three months after the training (Figure A3.2). Figure A3.1 shows that about 70% of micro-entrepreneurs used one participatory practice at baseline. In almost all cases this practice was soliciting feedback from family. The distributions are almost identical across the treatment and control conditions, suggesting the entrepreneurs in either condition had a similar level of baseline familiarity with the participatory practices.

**Figure A3.1: Histogram of Number of Practices Adopted at Baseline**

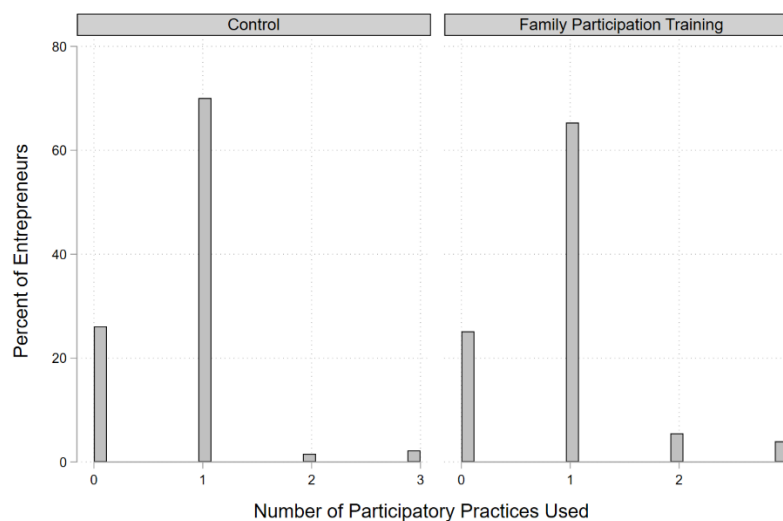
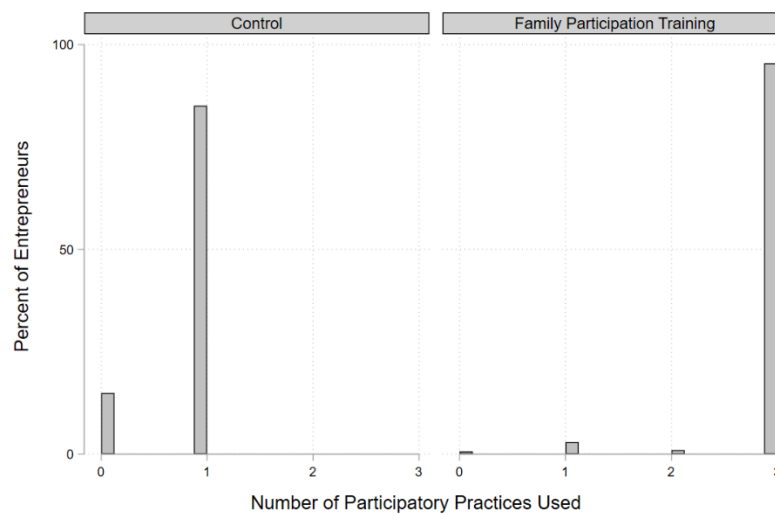


Figure A3.2 shows that the distribution of participatory practices differed considerably between the control and treatment conditions, three months after the training. In the treatment group, about 95% of participants reported using all three participatory practices, while in the control group the distribution is similar to what it was at baseline – although the number of participants reporting using one participatory practice increased to about 80% (as before, this was almost completely micro-entrepreneurs reporting soliciting feedback from family members).

**Figure A3.2: Histogram of Number of Practices Adopted 3 Months After Training**



Building on the analyses in the paper, Table A3.1 presents regression results that corroborate and complement the mechanisms presented in Table 8. One of the mechanisms described in the paper was that participatory practices improve relationships between micro-entrepreneurs and their family members. During the follow-up surveys micro-entrepreneurs were asked a “yes/no” question about whether they felt like there had been an improvement in the amount of support they received from family members for their businesses since the training program. While subjective, this reflected whether micro-entrepreneurs perceived a change in overall level of support from family. This binary outcome was regressed on family participation training in Models 1 and 2 in Table A3.1. The results suggest that micro-entrepreneurs in the treatment group are likelier to report an improvement in the level of support received from their families than micro-entrepreneurs in the control group.

An important mechanism explored in the paper are reductions in conflict. To complement the questions about number of disagreements with family members, micro-entrepreneurs were asked in the last survey wave whether they felt that using the family budget specifically had led to reductions in conflict (“yes/no”). This was regressed on the treatment training in Models 3 and 4 in Table A3.1. The results suggest that micro-entrepreneurs felt there was a strong relationship between using a family budget and reductions in conflict. This subjective report aligns with the results about frequency of family disagreements in Table 8, providing further support for this mechanism.

Finally, the paper discusses how participatory practices lead to the reduction of cross-domain financial flows for micro-entrepreneurs. These analyses in Table 8 measure these flows as the percentage of monthly profits claimed by family members. Yet, this masks potential changes in the absolute value of financial flows. Table A3.1 shows the results in Models 5 and 6 of regressing the absolute value of cash transfers to family members on the treatment indicator. These results reveal that even though micro-entrepreneurs in the treatment condition transferred a smaller proportion of their profits to family members, this still represented a larger absolute value cash

transfer. This suggests that the growth in their businesses performance outpaced the decrease in the proportion of profits given to family, leading to an overall increase in income shared.

**Table A3.1: Family Relationships**

|                               | Family Support                |                   | Does Family Budget<br>Reduce Conflict? |                     | Profits given to family<br>(FCFA) |                                      |
|-------------------------------|-------------------------------|-------------------|----------------------------------------|---------------------|-----------------------------------|--------------------------------------|
|                               | (1)                           | (2)               | (3)                                    | (4)                 | (5)                               | (6)                                  |
| Family Participation Training | 0.036 <sup>+</sup><br>(0.017) | 0.036*<br>(0.017) | -0.987**<br>(0.006)                    | -0.983**<br>(0.009) | 6046.407*<br>(2739.713)           | 5268.377*<br>(2000.492)              |
| Ewe ethnicity                 |                               | -0.010<br>(0.006) |                                        | -0.006<br>(0.010)   |                                   | -2776.707<br>(2096.360)              |
| Christian                     |                               | 0.008<br>(0.008)  |                                        | 0.017<br>(0.012)    |                                   | -514.512<br>(2260.871)               |
| Female                        |                               | -0.006<br>(0.005) |                                        | -0.005<br>(0.005)   |                                   | -10217.373**<br>(2000.530)           |
| Married                       |                               | -0.009<br>(0.007) |                                        | -0.001<br>(0.007)   |                                   | 4207.629*<br>(1548.166)              |
| Education level               |                               | 0.006<br>(0.004)  |                                        | -0.000<br>(0.001)   |                                   | 1044.547<br>(766.744)                |
| Kin involved in business      |                               | -0.000<br>(0.001) |                                        | -0.001<br>(0.003)   |                                   | 1043.920<br>(616.685)                |
| Firm age                      |                               | 0.000<br>(0.000)  |                                        | -0.001<br>(0.001)   |                                   | 304.909*<br>(122.213)                |
| Management practices score    |                               | 0.021<br>(0.024)  |                                        | 0.000<br>(0.006)    |                                   | 10049.179 <sup>+</sup><br>(5510.343) |
| Cohort size                   |                               | -0.000<br>(0.000) |                                        | 0.000<br>(0.000)    |                                   | -137.188<br>(80.218)                 |
| Community FE                  | Yes                           | Yes               | Yes                                    | Yes                 | Yes                               | Yes                                  |
| Sector FE                     | Yes                           | Yes               | Yes                                    | Yes                 | Yes                               | Yes                                  |
| Survey wave FE                | Yes                           | Yes               | Yes                                    | Yes                 | Yes                               | Yes                                  |
| Observations                  | 1756<br>593                   | 1756<br>593       | 589<br>589                             | 589<br>589          | 1181<br>592                       | 1181<br>592                          |

Note: The sample includes only post-treatment time periods. The outcome in Models 3 and 4 were only collected in the third follow-up survey, while the outcome in Models 5 and 6 were only collected in the second and third follow-up surveys, which accounts for the sample sizes in those regressions. Standard errors clustered by training cohort.

<sup>+</sup>  $p < 0.10$ , \*  $p < 0.05$ , \*\*  $p < 0.01$

## **Appendix 4: Do Participative Practices Affect Family Importance and Investment Readiness?**

Two potential alternative explanations for how the family participation training affected the performance of micro-enterprises is that it potentially increased the extent to which micro-entrepreneurs perceived their families as important and it may have also primed them to make more investments. Tables A4.1 and A4.2 explore these possibilities.

Models 1 and 2 in Table 4.1 regress the extent which micro-entrepreneurs rated their families as important, on a 4 point Likert scale, on the treatment. The regression results suggest that there is no statistically significant difference between the treatment and control groups. Moreover, the coefficient for the treatment is small in magnitude, suggesting that the treatment does not seem to have changed how micro-entrepreneurs think about their families or the importance they attribute to them.

Models 3 and 4 in Table 4.1 regress a binary indicator for whether the micro-entrepreneur had prepared the necessary financial documents to secure a microfinance loan on the treatment. Again, the treatment effect is not statistically significant and the magnitude of the coefficient is small, suggesting there was no measurable difference between the two groups in the extent to which they were prepared to apply for loans. Similarly, Models 5 and 6 regress the number of loans received on the treatment and, as in the previous models, the effect is small and statistically non-significant. If the family participation training had disproportionately primed or encouraged micro-entrepreneurs to make investments we would expect to see differences in the degree to which they mobilized to secure financing for those investments. The results in Table A4.1 do not reveal any differences, suggesting that the two training programs likely did not differentially affect micro-entrepreneurs' intentions to pursue financing.

Table A4.2 further explores this issue by regressing investments by entrepreneurs in the control group on a dummy variable for the post-training time periods. The models in Table A4.2 use a difference-in-differences specification, which involves including all time periods and including entrepreneur fixed effects. The coefficient for the post-training time indicator therefore estimates changes in investments between the baseline and the post-training time periods for entrepreneurs in the control group. Model 1 shows that entrepreneurs in the control group were almost 30% likelier to make an investment in any of the post-training time periods compared to the baseline, and Model 2 shows that in any given time period after the training they invested more than double the amount they had at baseline. This suggests that entrepreneurs in the control group invested considerably more after the training, which is also illustrated in Figure 3 in the main paper. In it, the solid line shows investments increasing after the training for control group entrepreneurs. According to that figure, by the end of the study, 9 months after the training, control group entrepreneurs were investing on average at higher levels than they had been at baseline. Taken together this provides more evidence that the control group received some encouragement and instruction about the value of investing and how to pursue investment opportunities.

Table A4.1: Family Participation Training, Family Importance, and Loans

|                               | Family Importance |                   | Prepared Documents<br>for Loan |                     | Loans Received   |                    |
|-------------------------------|-------------------|-------------------|--------------------------------|---------------------|------------------|--------------------|
|                               | (1)               | (2)               | (3)                            | (4)                 | (5)              | (6)                |
| Family Participation Training | 0.006<br>(0.006)  | 0.006<br>(0.006)  | 0.043<br>(0.032)               | 0.045<br>(0.028)    | 0.005<br>(0.021) | 0.006<br>(0.020)   |
| Ewe ethnicity                 |                   | 0.012<br>(0.010)  |                                | -0.032<br>(0.027)   |                  | -0.043*<br>(0.017) |
| Christian                     |                   | 0.003<br>(0.006)  |                                | -0.010<br>(0.027)   |                  | 0.007<br>(0.016)   |
| Female                        |                   | -0.027<br>(0.026) |                                | -0.090**<br>(0.031) |                  | 0.000<br>(0.026)   |
| Married                       |                   | -0.008<br>(0.006) |                                | 0.026<br>(0.024)    |                  | 0.017<br>(0.016)   |
| Education level               |                   | 0.004<br>(0.004)  |                                | 0.056**<br>(0.013)  |                  | 0.013+<br>(0.007)  |
| Kin involved in business      |                   | 0.013<br>(0.013)  |                                | 0.008<br>(0.009)    |                  | 0.006<br>(0.007)   |
| Firm age                      |                   | 0.000<br>(0.000)  |                                | 0.001<br>(0.001)    |                  | 0.001<br>(0.001)   |
| Management practices score    |                   | 0.050<br>(0.040)  |                                | -0.050<br>(0.058)   |                  | -0.013<br>(0.053)  |
| Cohort size                   |                   | 0.000<br>(0.000)  |                                | -0.002<br>(0.001)   |                  | -0.001<br>(0.001)  |
| Community FE                  | Yes               | Yes               | Yes                            | Yes                 | Yes              | Yes                |
| Sector FE                     | Yes               | Yes               | Yes                            | Yes                 | Yes              | Yes                |
| Survey wave FE                | Yes               | Yes               | Yes                            | Yes                 | Yes              | Yes                |
| Observations                  | 587               | 587               | 1762                           | 1762                | 1762             | 1762               |
| Entrepreneurs                 | 587               | 587               | 593                            | 593                 | 593              | 593                |
| $R^2$                         | 0.005             | 0.041             | 0.190                          | 0.238               | 0.030            | 0.049              |

Note: The sample includes only post-treatment time periods. The outcome in Models 1-2 was only measured in the last survey wave, which accounts for the sample size in those regressions. The outcomes in Models 3-6 were measured in all surveys, and hence control for the baseline value of the outcome. Standard errors clustered by training cohort.

+  $p < 0.10$ , \*  $p < 0.05$ , \*\*  $p < 0.01$

Table A4.2: Control Group Investments

|                 | Any investments?   | Total amount invested (lhs) |
|-----------------|--------------------|-----------------------------|
|                 | (1)                | (2)                         |
| Post-training   | 0.290**<br>(0.027) | 2.672**<br>(0.274)          |
| Entrepreneur FE | Yes                | Yes                         |
| Observations    | 1139               | 1139                        |
| Entrepreneurs   | 287                | 287                         |

Note: The regressions in this table use a difference-in-difference modeling approach, where all time periods are included along with entrepreneur fixed effects. The post-training variable is a dummy indicator for the post-training time periods. The sample includes only control group entrepreneurs. The outcome in model 1 is whether the entrepreneur made any investments. The outcome in model 2 is the total amount invested, transformed using inverse hyperbolic sine. Standard errors clustered by training cohort.

<sup>+</sup>  $p < 0.10$ , \*  $p < 0.05$ , \*\*  $p < 0.01$

## Appendix 5: Treatment Effect without Investments

To explore the role of investments in driving the treatment effects on performance, Table A5.1 estimates the impact of family participation training on profits and the performance index on the subsample of entrepreneurs who made no investments. The results in Models 1 and 2 suggest that the treatment effect was positive and statistically significant, although slightly smaller in magnitude than the results in the full sample (22% compared to about 26%). The results in Models 3 and 4 also reflect this pattern, the treatment effect is still positive, but slightly smaller in magnitude. Taken together, these results suggest that making investments may be an important intermediary step between participatory practices and financial performance – although these practices still have a positive effect on performance independent of any investments.

Table A5.1: Treatment Effects on Entrepreneurs without Investments

|                               | Monthly Profits (ihs) |                                | Performance Index  |                    |
|-------------------------------|-----------------------|--------------------------------|--------------------|--------------------|
|                               | (1)                   | (2)                            | (3)                | (4)                |
| Family Participation Training | 0.242**<br>(0.067)    | 0.228**<br>(0.055)             | 0.183**<br>(0.063) | 0.176**<br>(0.054) |
| Ewe ethnicity                 |                       | -0.045<br>(0.052)              |                    | -0.047<br>(0.053)  |
| Christian                     |                       | -0.029<br>(0.038)              |                    | -0.038<br>(0.044)  |
| Female                        |                       | -0.078 <sup>+</sup><br>(0.042) |                    | -0.042<br>(0.046)  |
| Married                       |                       | 0.036<br>(0.026)               |                    | 0.042<br>(0.025)   |
| Education level               |                       | 0.019<br>(0.022)               |                    | 0.023<br>(0.017)   |
| Kin involved in business      |                       | 0.039*<br>(0.015)              |                    | 0.029*<br>(0.014)  |
| Firm age                      |                       | 0.007*<br>(0.003)              |                    | 0.004<br>(0.003)   |
| Management practices score    |                       | 0.012<br>(0.108)               |                    | 0.073<br>(0.092)   |
| Cohort size                   |                       | -0.002 <sup>+</sup><br>(0.001) |                    | -0.002*<br>(0.001) |
| Community FE                  | Yes                   | Yes                            | Yes                | Yes                |
| Sector FE                     | Yes                   | Yes                            | Yes                | Yes                |
| Survey wave FE                | Yes                   | Yes                            | Yes                | Yes                |
| Observations                  | 757                   | 757                            | 757                | 757                |
| Entrepreneurs                 | 416                   | 416                            | 416                | 416                |

Note: The sample includes only post-treatment time periods and entrepreneurs who reported having made no investments in any time period. All models control for the baseline value of outcome variable. Standard errors are clustered at the training cohort level.

<sup>+</sup>  $p < 0.10$ , \*  $p < 0.05$ , \*\*  $p < 0.01$

## Appendix 6: Treatment Effects for Entrepreneurs who Co-Own with Spouses

Approximately 7% of micro-entrepreneurs in the sample reported co-owning their businesses with their spouses. In these cases, we might expect participatory practices to be of relatively less value since there is likely already considerable communication about the business between the entrepreneur and their spouse. To explore this case, Table A6.1 replicates Table 8 from the paper, testing the main outcome variables, using the subsample of entrepreneurs whose businesses were co-owned with their spouses. The results largely mirror those in the paper, although the statistical significance of the coefficient is more marginal. This is likely due to the small sample size, which leads to a lack of statistical power. While the treatment effect is smaller on the level of investments and the performance index, it is about the same for monthly profits. This provides mixed support for the contention that co-owned businesses benefit less from participatory practices with family. This may be due to the fact that micro-entrepreneurs are often embedded in extensive networks of kin, who still require structured communication about the business.

Table A6.1: Treatment Effects on Entrepreneurs whose Spouses are Co-Owners

|                               | Investments (lhs) |                    | Monthly Profits (lhs) |                    | Performance Index |                    |
|-------------------------------|-------------------|--------------------|-----------------------|--------------------|-------------------|--------------------|
|                               | (1)               | (2)                | (3)                   | (4)                | (5)               | (6)                |
| Family Participation Training | 3.041*            | 1.605 <sup>+</sup> | 0.394*                | 0.268 <sup>+</sup> | 0.285**           | 0.149              |
|                               | (1.139)           | (0.755)            | (0.144)               | (0.132)            | (0.073)           | (0.110)            |
| Ewe ethnicity                 |                   | 0.268              |                       | -0.051             |                   | 0.044              |
|                               |                   | (0.823)            |                       | (0.163)            |                   | (0.142)            |
| Christian                     |                   | -0.853             |                       | 0.082              |                   | -0.042             |
|                               |                   | (0.484)            |                       | (0.111)            |                   | (0.100)            |
| Female                        |                   | 1.303              |                       | -0.231             |                   | -0.100             |
|                               |                   | (0.959)            |                       | (0.137)            |                   | (0.068)            |
| Education level               |                   | 0.526              |                       | 0.069              |                   | 0.107 <sup>+</sup> |
|                               |                   | (0.436)            |                       | (0.040)            |                   | (0.060)            |
| Kin involved in business      |                   | 0.599              |                       | 0.105**            |                   | 0.098*             |
|                               |                   | (0.368)            |                       | (0.034)            |                   | (0.033)            |
| Firm age                      |                   | -0.006             |                       | 0.011 <sup>+</sup> |                   | 0.009 <sup>+</sup> |
|                               |                   | (0.066)            |                       | (0.006)            |                   | (0.004)            |
| Management practices score    |                   | 4.327*             |                       | 0.448              |                   | 0.397              |
|                               |                   | (1.545)            |                       | (0.451)            |                   | (0.341)            |
| Cohort size                   |                   | -0.121**           |                       | -0.013**           |                   | -0.014**           |
|                               |                   | (0.030)            |                       | (0.004)            |                   | (0.004)            |
| Community FE                  | Yes               | Yes                | Yes                   | Yes                | Yes               | Yes                |
| Sector FE                     | Yes               | Yes                | Yes                   | Yes                | Yes               | Yes                |
| Survey wave FE                | Yes               | Yes                | Yes                   | Yes                | Yes               | Yes                |
| Observations                  | 131               | 131                | 131                   | 131                | 131               | 131                |
| Entrepreneurs                 | 44                | 44                 | 44                    | 44                 | 44                | 44                 |

Note: The sample includes only post-treatment time periods and entrepreneurs who reported co-owning their businesses with their spouses. All models control for baseline value of the outcome variable. Standard errors are clustered at the training cohort level. <sup>+</sup>  $p < 0.10$ , \*  $p < 0.05$ , \*\*  $p < 0.01$

## Appendix 7: Treatment Effect Including Failed Businesses

After the training program, 8 micro-entrepreneurs dropped out of the sample because their businesses failed. All 8 of these micro-entrepreneurs were in the control group. These micro-entrepreneurs were surveyed once after their businesses failed, but their revenues, profits, and investment levels were undefined because their businesses didn't exist anymore. Hence they were dropped from the sample. However, to ensure that this did not unduly bias the results, Table A7.1 replicates Table 6 from the paper after including these 8 entrepreneurs and replacing their profits, revenues, and investments with "0." The coefficient estimates in all models in Table A7.1 remain statistically significant and are considerably larger in magnitude. This suggests that the results reported in the paper may be a more conservative estimate.

Table A7.1: Treatment Effect Including Failed Businesses

|                               | Investments (ihs)  |                    | Profits monthly (ihs) |                     | Performance index  |                     |
|-------------------------------|--------------------|--------------------|-----------------------|---------------------|--------------------|---------------------|
|                               | (1)                | (2)                | (3)                   | (4)                 | (5)                | (6)                 |
| Family Participation Training | 2.255**<br>(0.485) | 2.139**<br>(0.527) | 0.566**<br>(0.113)    | 0.519**<br>(0.089)  | 0.415**<br>(0.079) | 0.391**<br>(0.063)  |
| Ewe ethnicity                 |                    | 0.071<br>(0.273)   |                       | -0.212+<br>(0.119)  |                    | -0.135<br>(0.087)   |
| Christian                     |                    | -0.067<br>(0.232)  |                       | 0.042<br>(0.089)    |                    | -0.015<br>(0.060)   |
| Female                        |                    | -0.713*<br>(0.323) |                       | -0.703**<br>(0.208) |                    | -0.447**<br>(0.131) |
| Married                       |                    | 0.693*<br>(0.278)  |                       | 0.090<br>(0.126)    |                    | 0.097<br>(0.086)    |
| Education level               |                    | -0.055<br>(0.120)  |                       | -0.184+<br>(0.092)  |                    | -0.081<br>(0.063)   |
| Kin involved in business      |                    | 0.071<br>(0.098)   |                       | 0.065+<br>(0.032)   |                    | 0.037+<br>(0.019)   |
| Firm age                      |                    | 0.018<br>(0.011)   |                       | -0.000<br>(0.007)   |                    | -0.000<br>(0.004)   |
| Management practices score    |                    | 1.817*<br>(0.835)  |                       | 0.135<br>(0.523)    |                    | 0.129<br>(0.351)    |
| Cohort size                   |                    | -0.009<br>(0.018)  |                       | -0.004<br>(0.003)   |                    | -0.004+<br>(0.002)  |
| Community FE                  | Yes                | Yes                | Yes                   | Yes                 | Yes                | Yes                 |
| Sector FE                     | Yes                | Yes                | Yes                   | Yes                 | Yes                | Yes                 |
| Survey wave FE                | Yes                | Yes                | Yes                   | Yes                 | Yes                | Yes                 |
| Observations                  | 1786               | 1786               | 1786                  | 1786                | 1786               | 1786                |
| Entrepreneurs                 | 601                | 601                | 601                   | 601                 | 601                | 601                 |

Note: The sample includes only post-treatment time periods. Sample also includes firms that failed after the training program. All models control for baseline value of outcome variable. Robust standard errors clustered by training cohort.

+  $p < 0.10$ , \*  $p < 0.05$ , \*\*  $p < 0.01$

## Appendix 8: Attrition

Attrition from surveys is an important concern for field experiments because attrition that is correlated with the treatment could imbalance the sample and bias the results. While attrition levels were low (7.4% overall) compared to other studies (e.g. Anderson et al. (2018) report attrition rate of 21%), this section explores whether there is any evidence that attrition was biased.

Table A8.1 regresses a binary indicator of whether an entrepreneur was observed in the final survey on the treatment and other covariates. The regressions are estimated using OLS. The coefficient for family participation training is not statistically significant and is small in magnitude (on the order of 2%). This suggests that the participatory training is unlikely to be correlated with attrition and therefore attrition is unlikely to imbalance the sample.

Models 3, 4, and 5 in Table A8.1 also introduce the key outcome variables for H1 and H2 to test whether there is selective attrition. Selective attrition might occur if higher or lower performing entrepreneurs were likelier to attrit. In these regressions the investments, profits, and performance index are not correlated with attrition, which suggests that there is no evidence of selective attrition.

Table A8.1: Attrition

|                               | Was the firm observed in the last survey? |                    |                    |                    |                    |
|-------------------------------|-------------------------------------------|--------------------|--------------------|--------------------|--------------------|
|                               | (1)                                       | (2)                | (3)                | (4)                | (5)                |
| Family Participation Training | -0.002<br>(0.030)                         | -0.021<br>(0.027)  | -0.021<br>(0.027)  | -0.021<br>(0.027)  | -0.019<br>(0.027)  |
| Investments (ihs)             |                                           |                    | -0.000<br>(0.003)  |                    |                    |
| Profits monthly (ihs)         |                                           |                    |                    | -0.003<br>(0.009)  |                    |
| Performance Index             |                                           |                    |                    |                    | -0.012<br>(0.017)  |
| Married                       |                                           | 0.101**<br>(0.023) | 0.101**<br>(0.023) | 0.101**<br>(0.024) | 0.102**<br>(0.024) |
| Family involved in business   |                                           | -0.001<br>(0.007)  | -0.001<br>(0.007)  | -0.001<br>(0.007)  | -0.001<br>(0.007)  |
| Firm age                      |                                           | 0.000<br>(0.001)   | 0.000<br>(0.001)   | 0.000<br>(0.001)   | 0.000<br>(0.001)   |
| Management practices score    |                                           | 0.124*<br>(0.053)  | 0.126*<br>(0.057)  | 0.126*<br>(0.055)  | 0.135*<br>(0.058)  |
| Cohort size                   |                                           | -0.002*<br>(0.001) | -0.002*<br>(0.001) | -0.002+<br>(0.001) | -0.002+<br>(0.001) |
| Observations                  | 640                                       | 640                | 640                | 640                | 640                |
| Entrepreneurs                 | 640                                       | 640                | 640                | 640                | 640                |

Note: The outcome variable is a binary indicator of whether the entrepreneur appeared in the last survey wave. Robust standard errors clustered by training cohort. Regressions estimated using OLS. +  $p < 0.10$ , \*  $p < 0.05$ , \*\*  $p < 0.01$

Despite there being no evidence of selective attrition, Table A8.2 also estimates Lee bounds (Lee, 2009) to infer the range of possible treatment effects if there was selective attrition. This process estimates treatment effects after trimming the sample so that the number of control group and treatment group participants is equal and dropping the most extreme outcomes. This helps establish what the lowest possible treatment effect might be and the largest. For all outcomes, the observed coefficients in Table 6 from the paper fall within the 95% confidence interval for the treatment effect reported in Table A8.2. They are also within the estimated upper and lower bounds. This suggests that the results in Table 6 are unlikely to be driven by attrition bias.

Table A8.2: Lee bounds

|                         | Investments<br>(ihs) | Profits monthly<br>(ihs) | Performance Index |
|-------------------------|----------------------|--------------------------|-------------------|
| Lower bound             | 2.175<br>(0.200)     | 0.185<br>(0.027)         | 0.174<br>(0.036)  |
| Upper bound             | 2.429<br>(0.200)     | 0.262<br>(0.028)         | 0.279<br>(0.035)  |
| 95% Confidence Interval | [1.843, 2.761]       | [0.140, 0.307]           | [0.116, 0.336]    |

Total observations 2,434; Selected observations 2,405

The analyses in Tables A8.1 and A8.2 explore potential bias that could result from attrition after the training program. While there was no attrition during the training program (all 640 entrepreneurs who attended the first day of the training completed the entire training), there was attrition between the registration for the training and the first day of the training. In particular, 827 micro-entrepreneurs registered to attend the training, while 640 attended. This means about 29% of registrants attrited. If this attrition occurred more for one group of entrepreneurs than another (e.g. by attracting more motivated entrepreneurs) it could introduce biases in the analyses. As part of the design of the recruitment process, micro-entrepreneurs did not know there were two different training programs and were not aware of the details of the program they were signing up for. It is therefore unlikely that any of the attrition between registration and attendance introduced any bias. However, to ensure this was not the case Table A8.3 regresses a binary indicator for whether an entrepreneur attended the training on their assignment to the treatment condition. The coefficient for assignment to the treatment is negative but not statistically significant. This suggests that slightly more entrepreneurs who had been assigned to treatment attrited, but this is not a statistically meaningful difference. This is reflect in Table A8.4, which summarizes the average attendance rate per cohort by treatment condition. For the average cohort in the control condition the attendance rate was 88%, while the average attendance for treatment condition cohorts was 73%. According to t-tests this difference is not statistically significant. Taken together these

additional results provide some reassurance that attrition between the registration and the participation in the training was unlikely to introduce bias.

Table A8.3: Attrition after registration

|                                 | Attended training<br>(1) |
|---------------------------------|--------------------------|
| Assigned to treatment condition | -0.164<br>(0.129)        |
| Observations                    | 827                      |
| Entrepreneurs                   | 827                      |

Note: The sample includes all entrepreneurs who registered to attend the training program. The outcome is whether the entrepreneur attended the training. Robust standard errors clustered by assigned training cohort.

<sup>+</sup>  $p < 0.10$ , \*  $p < 0.05$ , \*\*  $p < 0.01$

Table 8.4: Difference in attendance rates

|                           | Mean attendance rate |
|---------------------------|----------------------|
| Family Training Cohorts   | 73%                  |
| Control Condition Cohorts | 88%                  |
| Difference in means       | 15 percentage points |
| t-stat                    | 1.2702               |

## Appendix 9: Extra Control Variables

While the randomization resulted in a balanced sample (see Table 2 in the paper), this section replicates Table 6 from the paper after introducing additional control variables. In particular, the regressions in Table A9.1 controls for the number of children the entrepreneur has, the number of employees working in the business, whether they had a bank account, the number of loans they had, the size of their advice network, and whether they had slack resources. These variables are all measured at baseline. The regressions are estimated using the same ANCOVA model in the paper. Results show that the effect of participative training on investments, profits, and the performance index doesn't change after introducing these additional control variables.

Table A9.1: Testing H1 and H2 with additional control variables

|                               | Investments (lhs)  | Monthly Profits (lhs) | Performance Index   |
|-------------------------------|--------------------|-----------------------|---------------------|
|                               | (1)                | (2)                   | (3)                 |
| Family Participation Training | 2.040**<br>(0.538) | 0.252**<br>(0.034)    | 0.291**<br>(0.047)  |
| Ewe ethnicity                 | 0.114<br>(0.279)   | -0.035<br>(0.029)     | -0.075+<br>(0.041)  |
| Christian                     | -0.108<br>(0.225)  | -0.012<br>(0.027)     | 0.001<br>(0.044)    |
| Female                        | -0.543<br>(0.329)  | -0.136**<br>(0.033)   | -0.203**<br>(0.060) |
| Married                       | 0.533+<br>(0.291)  | 0.028<br>(0.030)      | 0.024<br>(0.041)    |
| Education level               | 0.013<br>(0.117)   | 0.041*<br>(0.019)     | 0.083**<br>(0.023)  |
| Kin involved in business      | 0.041<br>(0.102)   | 0.022<br>(0.013)      | 0.020<br>(0.017)    |
| Firm age                      | 0.012<br>(0.013)   | 0.004*<br>(0.002)     | 0.005+<br>(0.003)   |
| Management practices score    | 1.269<br>(0.916)   | 0.067<br>(0.075)      | -0.010<br>(0.112)   |
| Cohort size                   | -0.005<br>(0.018)  | -0.002+<br>(0.001)    | -0.002<br>(0.002)   |
| Children                      | 0.066<br>(0.075)   | 0.030**<br>(0.009)    | 0.034**<br>(0.011)  |
| Employees                     | 0.042<br>(0.042)   | 0.031**<br>(0.008)    | 0.108**<br>(0.012)  |
| Microfinance account          | 0.214<br>(0.215)   | 0.057*<br>(0.025)     | 0.094*<br>(0.040)   |
| Loans                         | 0.131<br>(0.419)   | 0.016<br>(0.033)      | -0.009<br>(0.042)   |
| Size of advice network        | 0.082<br>(0.077)   | 0.001<br>(0.008)      | 0.004<br>(0.013)    |
| Slack resources               | 0.791<br>(0.465)   | 0.134**<br>(0.043)    | 0.189*<br>(0.080)   |

|                |      |      |      |
|----------------|------|------|------|
| Survey wave FE | Yes  | Yes  | Yes  |
| Community FE   | Yes  | Yes  | Yes  |
| Activity FE    | Yes  | Yes  | Yes  |
| Observations   | 1750 | 1750 | 1750 |
| Entrepreneurs  | 589  | 589  | 589  |

Note: The sample includes only post-treatment time periods. All models control for baseline value of outcome variable. Robust standard errors clustered by training cohort. The sample size in this table is smaller by 4 entrepreneurs because they had missing observations for the additional control variables.

<sup>+</sup>  $p < 0.10$ , \*  $p < 0.05$ , \*\*  $p < 0.01$

## Appendix 10: Difference-in-differences Estimation

Table A10.1 estimates the effect of participatory training on investments, monthly profits, and the performance index using a difference-in-differences approach, which allows the inclusion of entrepreneur fixed effects.

The regressions in Table A10.1 largely replicate the results in Table 6. The estimated effect of participative training on investments is larger in Models 1 and 2. The magnitude of the effect is a little smaller for profits (Models 3 and 4), at 23% rather than 26%. Finally the estimated impact on the performance index is also smaller in magnitude, with the effect being closer to 13%, rather than 21%.

These results suggest that the treatment effects in Table 6 may be the upper bound of the effect, since the difference-in-differences estimates suggest slightly smaller effects. Nevertheless, the interpretation of the effects as being positive and substantively impactful for entrepreneurs remains unchanged.

Table A10.1: Testing H1 and H2 using difference-in-differences

|                                                | Investments (lhs)  |                    | Monthly Profits (lhs) |                    | Performance Index |                   |
|------------------------------------------------|--------------------|--------------------|-----------------------|--------------------|-------------------|-------------------|
|                                                | (1)                | (2)                | (3)                   | (4)                | (5)               | (6)               |
| Family Participation Training x Post-treatment | 2.789**<br>(0.897) | 3.274**<br>(0.715) | 0.273*<br>(0.124)     | 0.233**<br>(0.070) | 0.117+<br>(0.068) | 0.135*<br>(0.059) |
| Entrepreneur FE                                | Yes                | Yes                | Yes                   | Yes                | Yes               | Yes               |
| Sector FE                                      | Yes                | Yes                | Yes                   | Yes                | Yes               | Yes               |
| Community FE                                   | Yes                | Yes                | Yes                   | Yes                | Yes               | Yes               |
| Survey wave FE                                 | Yes                | Yes                | Yes                   | Yes                | Yes               | Yes               |
| Control variables                              | No                 | Yes                | No                    | Yes                | No                | Yes               |
| Observations                                   | 2355               | 2355               | 2355                  | 2355               | 2355              | 2355              |
| Firms                                          | 593                | 593                | 593                   | 593                | 593               | 593               |

Note: The sample includes all four survey waves. Robust standard errors clustered by training cohort. Control variables are measured at baseline and are interacted with the post-treatment dummy. The controls include Ewe ethnicity, Christian, female, married, education level, family involved in business, firm age, management practices score, and cohort size.

+  $p < 0.10$ , \*  $p < 0.05$ , \*\*  $p < 0.01$

## Appendix 11: Alternative Outcome Variables

To ensure that the results in Table 6 are not a product of the transformations used for the outcome variables, Table A11.1 replicates the results in Table 4 using the untransformed version of those variables. Table 6 in the paper used variables that were transformed using inverse hyperbolic sine (ihs) and winsorized at the 1% and 99% levels. In the table below, the variables are either only winsorized or not transformed at all. The coefficients for participative training are positive and statistically significant, validating Hypotheses 1 and 2. This suggests that the main results are not dependent on the particular transformations used.

Table A11.1: Testing H1 and H2 with Untransformed Outcome Variables

|                            | Investments (FCFA)      |                         |                         |                          | Monthly Profits (FCFA)    |                            |                           |                            |
|----------------------------|-------------------------|-------------------------|-------------------------|--------------------------|---------------------------|----------------------------|---------------------------|----------------------------|
|                            | Winsorized              |                         | Not Winsorized          |                          | Winsorized                |                            | Not Winsorized            |                            |
|                            | (1)                     | (2)                     | (3)                     | (4)                      | (5)                       | (6)                        | (7)                       | (8)                        |
| Participative Training     | 3896.438**<br>(813.936) | 3640.098**<br>(767.987) | 6045.429*<br>(2230.092) | 5331.704**<br>(1786.423) | 19864.783**<br>(3609.782) | 18494.824**<br>(2688.109)  | 21433.515**<br>(3728.002) | 19936.204**<br>(2871.824)  |
| Ewe ethnicity              |                         | -238.018<br>(529.230)   |                         | -1543.672<br>(2360.206)  |                           | -2849.336<br>(2471.974)    |                           | -1777.724<br>(3669.036)    |
| Christian                  |                         | -719.507<br>(717.051)   |                         | -3721.563<br>(3397.640)  |                           | 129.300<br>(2408.435)      |                           | -37.880<br>(2703.326)      |
| Female                     |                         | -2029.530*<br>(743.125) |                         | -4233.714*<br>(1961.607) |                           | -10743.575**<br>(2865.299) |                           | -13275.387**<br>(2993.840) |
| Married                    |                         | 1572.262*<br>(608.482)  |                         | 2840.370+<br>(1470.713)  |                           | 6028.010*<br>(2383.798)    |                           | 7914.745*<br>(2977.893)    |
| Education level            |                         | 490.457*<br>(229.874)   |                         | 1343.531+<br>(775.110)   |                           | 2364.719*<br>(1116.796)    |                           | 3092.950*<br>(1363.367)    |
| Kin involved in business   |                         | 87.880<br>(175.414)     |                         | -283.771<br>(305.379)    |                           | 1817.013+<br>(910.259)     |                           | 872.261<br>(1265.356)      |
| Firm age                   |                         | 34.878<br>(30.074)      |                         | -22.529<br>(97.587)      |                           | 387.783*<br>(153.119)      |                           | 470.123*<br>(180.407)      |
| Management practices score |                         | 3509.837+<br>(1962.180) |                         | 6262.420*<br>(2926.564)  |                           | 12368.697+<br>(6342.791)   |                           | 22195.857*<br>(9666.310)   |
| Cohort size                |                         | -50.242+<br>(27.301)    |                         | -150.106<br>(94.849)     |                           | -237.201*<br>(102.653)     |                           | -239.005+<br>(121.154)     |
| Observations               | 1762                    | 1762                    | 1762                    | 1762                     | 1762                      | 1762                       | 1762                      | 1762                       |
| Entrepreneurs              | 593                     | 593                     | 593                     | 593                      | 593                       | 593                        | 593                       | 593                        |

Note: Robust standard errors clustered by training cohort. Baseline value of the outcome is included as a control in each model.

+  $p < 0.10$ , \*  $p < 0.05$ , \*\*  $p < 0.01$

To ensure that the treatment estimates for the performance index are not driven by the inclusion of any single variable in the index, Table A11.2 estimates the impact of treatment on the performance index after dropping each of the component variables in sequence. Model 1 in Table A11.2 replicates the result from Table 6 in the paper. Models 2-8 each drop one component of the index, in sequence. The results show that the treatment effect is not sensitive to the inclusion of any particular variable in the performance index.

Table A11.2: The effect of family participation on different constructions of the performance index

|                               | Variations of the Performance Index |                     |                     |                     |                     |                     |                     |                     |
|-------------------------------|-------------------------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|
|                               | (1)                                 | (2)                 | (3)                 | (4)                 | (5)                 | (6)                 | (7)                 | (8)                 |
| Family Participation Training | 0.216**<br>(0.036)                  | 0.212**<br>(0.035)  | 0.213**<br>(0.035)  | 0.222**<br>(0.032)  | 0.213**<br>(0.037)  | 0.216**<br>(0.037)  | 0.236**<br>(0.037)  | 0.204**<br>(0.041)  |
| Ewe ethnicity                 | -0.021<br>(0.036)                   | -0.006<br>(0.036)   | -0.009<br>(0.036)   | -0.014<br>(0.037)   | -0.020<br>(0.037)   | -0.020<br>(0.037)   | -0.022<br>(0.039)   | -0.057+<br>(0.032)  |
| Christian                     | -0.041<br>(0.036)                   | -0.047<br>(0.036)   | -0.044<br>(0.036)   | -0.049<br>(0.036)   | -0.045<br>(0.038)   | -0.043<br>(0.038)   | -0.046<br>(0.038)   | -0.014<br>(0.033)   |
| Female                        | -0.090**<br>(0.026)                 | -0.076**<br>(0.024) | -0.077**<br>(0.024) | -0.123**<br>(0.028) | -0.085**<br>(0.026) | -0.082**<br>(0.026) | -0.101**<br>(0.028) | -0.089**<br>(0.030) |
| Married                       | 0.086**<br>(0.029)                  | 0.088**<br>(0.028)  | 0.089**<br>(0.028)  | 0.089**<br>(0.031)  | 0.087**<br>(0.030)  | 0.088**<br>(0.030)  | 0.091**<br>(0.031)  | 0.067+<br>(0.033)   |
| Education level               | 0.058**<br>(0.016)                  | 0.053**<br>(0.016)  | 0.054**<br>(0.016)  | 0.067**<br>(0.018)  | 0.062**<br>(0.017)  | 0.062**<br>(0.017)  | 0.064**<br>(0.018)  | 0.048**<br>(0.015)  |
| Kin involved in business      | 0.021<br>(0.014)                    | 0.019<br>(0.013)    | 0.019<br>(0.014)    | 0.020<br>(0.013)    | 0.019<br>(0.014)    | 0.020<br>(0.014)    | 0.022<br>(0.015)    | 0.028+<br>(0.014)   |
| Firm age                      | 0.005**<br>(0.002)                  | 0.004*<br>(0.002)   | 0.004*<br>(0.002)   | 0.008**<br>(0.002)  | 0.005*<br>(0.002)   | 0.005*<br>(0.002)   | 0.006**<br>(0.002)  | 0.005*<br>(0.002)   |
| Management practices score    | 0.142+<br>(0.079)                   | 0.157+<br>(0.081)   | 0.145+<br>(0.080)   | 0.114<br>(0.070)    | 0.153+<br>(0.084)   | 0.150+<br>(0.083)   | 0.144+<br>(0.082)   | 0.131<br>(0.084)    |
| Cohort size                   | -0.003*<br>(0.001)                  | -0.003*<br>(0.001)  | -0.003*<br>(0.001)  | -0.002*<br>(0.001)  | -0.003*<br>(0.001)  | -0.003*<br>(0.001)  | -0.003*<br>(0.001)  | -0.002+<br>(0.001)  |
| Community FE                  | Yes                                 | Yes                 | Yes                 | Yes                 | Yes                 | Yes                 | Yes                 | Yes                 |
| Sector FE                     | Yes                                 | Yes                 | Yes                 | Yes                 | Yes                 | Yes                 | Yes                 | Yes                 |
| Survey wave FE                | Yes                                 | Yes                 | Yes                 | Yes                 | Yes                 | Yes                 | Yes                 | Yes                 |
| Observations                  | 1762                                | 1762                | 1762                | 1762                | 1762                | 1762                | 1762                | 1762                |
| Entrepreneurs                 | 593                                 | 593                 | 593                 | 593                 | 593                 | 593                 | 593                 | 593                 |

Note: The sample includes only post-treatment time periods. All models control for baseline value of outcome variable. The outcome in Model 1 is the performance index including all component variables, this model replicates the results in Table 6 of the paper. Models 2-8 estimate the effect of family participation on the performance index after sequentially dropping each of the component variables. Robust standard errors clustered by training cohort. +  $p < 0.10$ , \*  $p < 0.05$ , \*\*  $p < 0.01$

Table A11.3 explores the impact of family participation training on different measures of investment. In particular, Models 1 and 2 estimate the effect on making any investment, which provides insight into the extensive margin of the treatment. The effect is positive and statistically significant, suggesting that micro-entrepreneurs in the treatment condition are 20% likelier to make any investment compared to the control group. This result complements the findings in Table 6 which reflect the intensive margin of the treatment. Models 3 and 4 in Table A11.3 show the treatment effect on investment quartiles. Here investments are categorized as none, low, moderate, and high. The results show that the treatment led micro-entrepreneurs to be on average in a higher quartile of investments than the control group.

Table A11.3: Alternative Definitions of Investments

|                               | Any Investment     |                    | Quartiles of Investments |                    |
|-------------------------------|--------------------|--------------------|--------------------------|--------------------|
|                               | (1)                | (2)                | (3)                      | (4)                |
| Family Participation Training | 0.208**<br>(0.049) | 0.199**<br>(0.054) | 0.424**<br>(0.095)       | 0.405**<br>(0.105) |
| Ewe ethnicity                 |                    | 0.014<br>(0.028)   |                          | 0.023<br>(0.057)   |
| Christian                     |                    | -0.005<br>(0.024)  |                          | -0.013<br>(0.048)  |
| Female                        |                    | -0.048<br>(0.031)  |                          | -0.094<br>(0.065)  |
| Married                       |                    | 0.060*<br>(0.028)  |                          | 0.111+<br>(0.054)  |
| Education level               |                    | -0.005<br>(0.012)  |                          | -0.009<br>(0.025)  |
| Kin involved in business      |                    | 0.006<br>(0.010)   |                          | 0.011<br>(0.018)   |
| Firm age                      |                    | 0.002<br>(0.001)   |                          | 0.004+<br>(0.002)  |
| Management practices score    |                    | 0.178+<br>(0.089)  |                          | 0.332+<br>(0.171)  |
| Cohort size                   |                    | -0.001<br>(0.002)  |                          | -0.002<br>(0.004)  |
| Community FE                  | Yes                | Yes                | Yes                      | Yes                |
| Sector FE                     | Yes                | Yes                | Yes                      | Yes                |
| Survey wave FE                | Yes                | Yes                | Yes                      | Yes                |
| Observations                  | 1762               | 1762               | 1762                     | 1762               |
| Entrepreneurs                 | 593                | 593                | 593                      | 593                |

Note: The sample includes only post-treatment time periods. All models control for the baseline value of the outcome variable. Standard errors are clustered at the cohort training level.

+  $p < 0.10$ , \*  $p < 0.05$ , \*\*  $p < 0.01$

## Appendix 12: Quantile Regressions

This section explores how participative training affects different quantiles of the performance distribution. Figure A12.1 plots the estimated effect of the training on investments at every 5<sup>th</sup> quantile of the distribution for baseline investments, along with 95% confidence intervals in the shaded regions. The figure shows that the treatment leads to a statistically significant increase in investments for micro-entrepreneurs who are above the 40<sup>th</sup> percentile. The bulk of the effect is driven by micro-entrepreneurs between the 40<sup>th</sup> and 65<sup>th</sup> percentile of investments. The effect is still positive for those micro-entrepreneurs at higher levels of investment, but the effect size is much smaller and closer to zero. This suggests that the family participation training has the most impact on micro-entrepreneurs in the middle range of the distribution and does not seem to improve investment outcomes for entrepreneurs at the bottom of the distribution.

Figure A12.1: Quantile regression plot for investment (ihs)

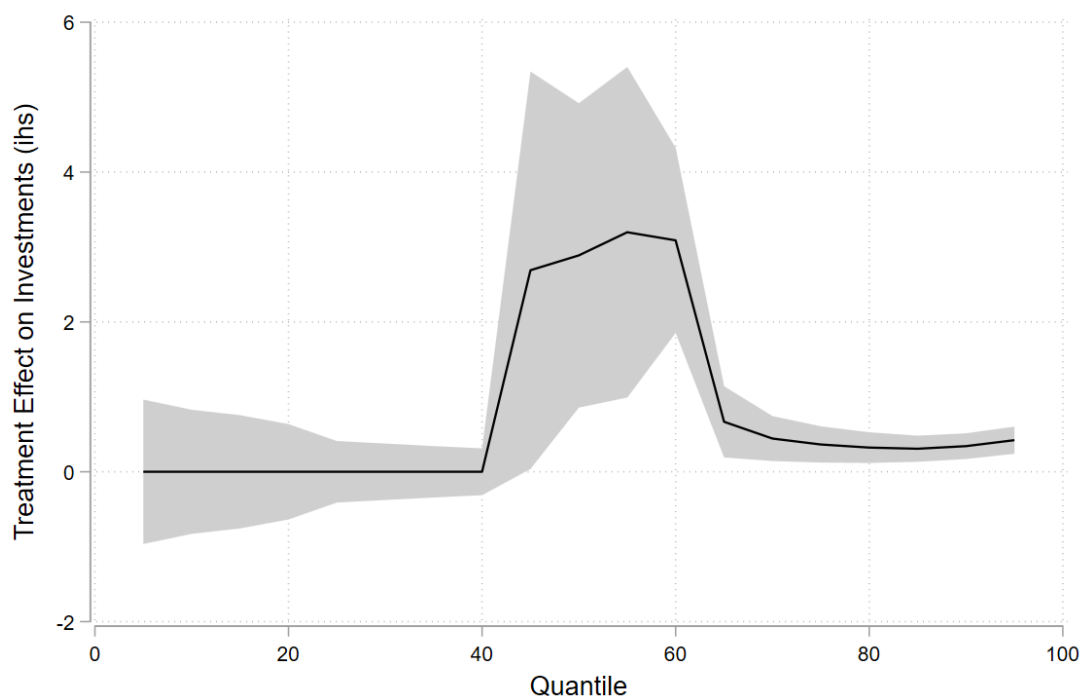


Figure A12.2 shows the same plot for monthly profits. In this figure the effect is similar across different percentiles, although the impact is a little higher around the 65<sup>th</sup> percentile. This suggests that perhaps higher performing entrepreneurs benefit slightly more from the training, which would also align with the quantile plot for investments. Figure A12.3 shows the plot for the performance index. As with Figure A12.2, the performance effect of family participation training is positive and statistically significant throughout the performance distribution, although there is a pronounced uptick in the effect at the upper tail of the distribution, which again may suggest that high performing entrepreneurs may benefit slightly more from the intervention.

Figure A12.2: Quantile regression plot for monthly profits (lhs)

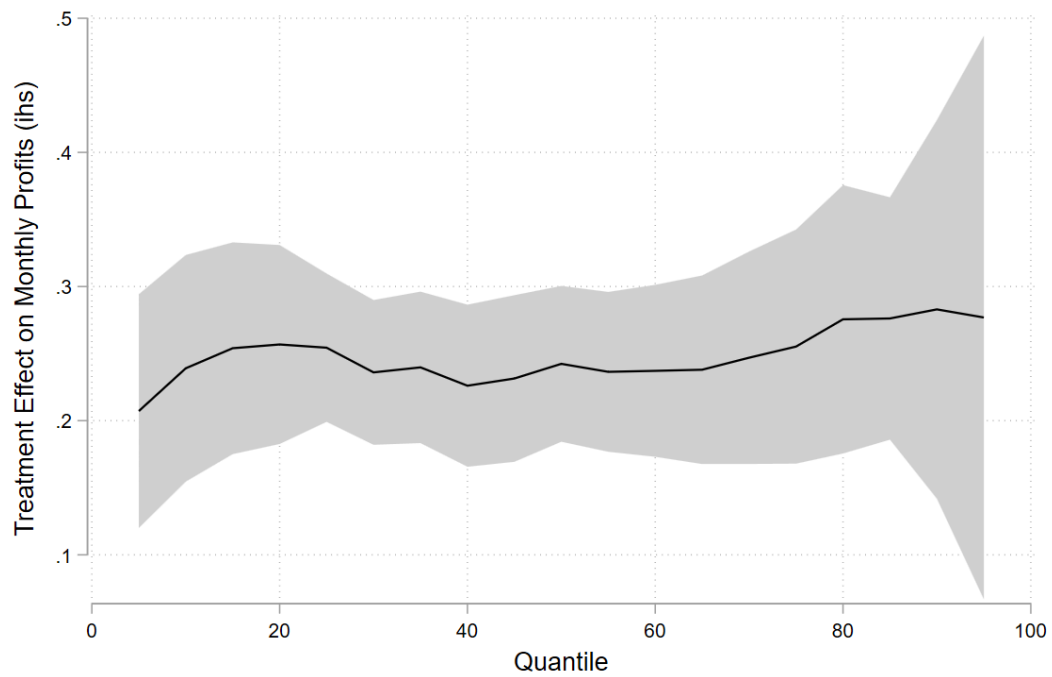
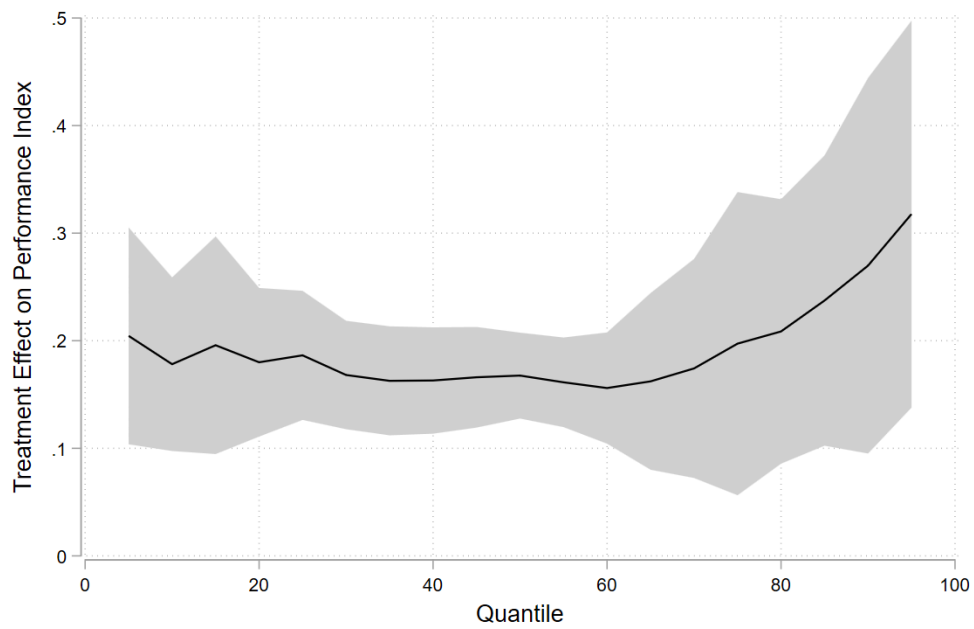


Figure A12.3: Quantile regression plot for performance index



## Appendix 13: Post-Hoc Power Calculations

The statistical power of a field experiment is the probability that it will reject a null hypothesis when that null hypothesis is truly false. In the context of experiments evaluating the efficacy of training programs, such as the present study, the null hypothesis is that the training had no effect on profits. Prior studies with similar nulls have relied on a wide range of sample sizes. At the lower end, studies like Agarwal et al. (Agarwal et al., 2025) and Chatterji et al. (2019) have samples of about 150 participants, while larger entrepreneur training studies like Davies et al. (2024) or Campos et al. (2017) have over 1500 participants. The majority of studies, however, have tended to use samples of 200-400 individuals (McKenzie et al., 2021).

McKenzie and Woodruff (2014) argue that for an entrepreneur training program to be impactful in the context of a developing country, it would not be unreasonable to expect it to achieve increases in revenues and profits of around 25%. This would mean that a business earning \$100 a month and \$1200 a year (which is a little over average income per capita in Togo) would generate \$300 more a year after the training, which would meaningfully improve the entrepreneurs' life. Most studies surveyed by McKenzie and Woodruff (2014) with sample sizes under 400 participants are not adequately powered to detect a 25% increase in profits. Given this, the starting point for this study was to recruit more than 400 participants.

Building on this, I used the Stata program "clustercampsi," which allows for cluster randomized control trials (Hemming and Marsh, 2013), to estimate the required sample size to detect a treatment effect of at least 25%. Assuming a power of 80% and a significance level of 5%, I assumed the average cluster size would be 25 entrepreneurs and there would be 10 clusters per arm (so a total of 20 clusters). I also assumed an intra-cluster correlation (ICC) of 0.27 for the outcome variable, which is what was reported in Dimitriadis and Koning (2022). Under these assumptions a sample of 500 would enable me to detect a minimum change in profits of 7.5%. Given the goal of detecting a effect size of 25% and given that in practice some of the assumed conditions might not be met, I pre-registered a target sample size of 600.

In practice, the early training cohorts had higher levels of no-shows, which meant that we needed to add 4 more training cohorts to reach the goal of 600 participants. In doing so, a few more participants attended than expected, leading to a final sample size of 640.

Given that the execution of the field experiment deviated from some of the assumed parameters, I use simulations to explore the ex post power to estimate the observed effect size. I rely on `pc_simulation` (Burlig, Preonas, and Woerman, 2020) to use the actual observed data from the experiment to estimate the ex post power. Given that the observed treatment effect (the difference between profits (ihs) for treatment and control groups) is on average 0.25, when we enter the details of the estimation approach used in the paper [Stata command: `pc_simulate ihs_profits_monthly_winsorized, model(ANCOVA) mde(0.25) i(ID) t(wave) p(0.5) pre(1) post(3) absorb(act commune wave) vce(cluster cohort)`] the resulting power is 100%. This suggests that the field experiment is adequately powered to detect the main result in the paper.

## Appendix 14: Experiment Pre-Registration

The experiment in this study was pre-registered before data collection began on the Open Science Framework (OSF). The registration included details about the data collection process, sample size, the hypotheses to be tested, and the regression models to be used to test these hypotheses. At the time of registration, the training that was the focus of the experiment was called a family business practices training, rather than a participative approach to family training. This label was chosen at the time because it aligned more closely with the training materials, which did not explicitly mention participative management theory even though they were inspired from it. The ANCOVA and the diff-in-diff regression models used in this paper to test the hypotheses were both pre-registered.

The main way in which this study deviates from the pre-registration is in the ordering of the hypotheses and their positioning in the study. The original pre-registration listed six hypotheses. These included the two key hypotheses discussed in this study: investments (H1) and profits (H2). The other four are tested in this paper, but not discussed as hypotheses. Hypothesis 6 is tested in Table 3, while hypotheses 3, 4, and 5 are tested in Table 5 in the paper. These are described as mechanisms, rather than hypotheses in this study.

An anonymized version of the pre-registration can be accessed here:

[https://osf.io/9xcgf/?view\\_only=a84c2a5948af4f02a38d0bcc0e7ec39b](https://osf.io/9xcgf/?view_only=a84c2a5948af4f02a38d0bcc0e7ec39b)

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