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Virtual Collaboration Technology and International Business Coaching: Examining the Impact on Marketing Strategies and Sales

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Abstract. This paper studies the impact of international business coaching via virtual collaboration technology on the strategies and sales of emerging market entrepreneurs. It sheds light on three novel research questions. (1) What is the effect of virtual business coaching on firm sales? (2) What is the mechanism through which this effect occurs? Specifically, does virtual coaching stimulate shifts in marketing strategy? (3) Do entrepreneurs benefit more from virtual coaching when they are less strategic in their decision making? We conducted a randomized controlled field experiment with 930 entrepreneurs in Uganda to examine the impact of a virtual coaching intervention that connects management professionals in primarily advanced markets and entrepreneurs in emerging markets with the aim of improving business performance. The analysis finds a positive and significant main effect on firm sales; treatment entrepreneurs increase monthly sales by 27.6% on average. In addition, entrepreneurs who receive virtual coaching are 52.8% more likely to have shifted their marketing strategy in a new direction. Moreover, consistent with this mechanism of inducing strategic business changes, the results show that entrepreneurs who receive virtual coaching tend to do better when they (ex ante) lack strategic focus. These results have important implications for the development of marketing strategies by entrepreneurs and multinational managers, as well as for policy makers interested in improving the performance of small firms in emerging markets and beyond.

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1. Introduction

While near impossible for a single firm to alter entire market trends, it can analyze customer needs, existing offerings and market conditions (i.e., the 3Cs of marketing) then adjust its strategic direction.[1] Such changes in marketing strategy represent critical moments that can fuel growth or force failure. For instance, Wrigley was not always a gum manufacturer; as a door-to-door salesman of household cleaning products, Mr. Wrigley discovered people actually valued the free gum he offered during visits, so he changed his focus to creating a *new offering* (chewing gums branded Spearmint and Juicy Fruit) that would meet this growing customer need.[2] Or, consider that Twitter actually started as Odeo; after getting squeezed out as a podcast-sharing network, Odeo decided to *narrow its offering* based on a side project (a group send short message service (SMS) app) and shifted its direction to become a status-updating microblog called "twttr."[3] In another example of strategic marketing change, Starbucks *broadened its offering* by introducing

brewed coffee (and an Italian coffee bar experience) alongside its espresso makers and coffee beans.[4] And Nokia began as a Finnish paper mill, evolved into a rubber and electronics manufacturer, and then, eventually marketed only *advanced offerings* in the handset industry.[5] A recent strategic shift in the mobile money space included the decision by Kenya's M-Pesa to switch its *target segment* from microfinance borrowers to workers needing to send money home.[6] Further, Avon's growth was fueled by changing its *go-to-market* strategy to a salesforce of female cosmetic reps.[7]

As these examples illustrate, studying a firm's customers, offerings, and markets then shifting strategic direction can create value for businesses regardless of size (multinational versus start-up), sector (manufacturer versus retailer), or location (advanced versus emerging market). And in recent years, both marketing educators and practitioners have paid greater attention to such strategy or business model canvassing (see Osterwalder and Pigneur 2013). Indeed, scholars suggest that innovating or changing a firm's business model (i.e., pivoting) can be a source of competitive advantage (Christensen 2001, Chesbrough 2010) and can lead to performance improvements (Zott and Amit 2007, Cucculelli and Bettinelli 2015). In the marketing literature, researchers have also proposed that the effectiveness of a firm's marketing strategy is positively related to business performance (Narver and Slater 1990, Day 1994, Boulding and Staelin 1995, Moorman and Rust 1999, Buzzell 2004). We refer to *marketing strategy innovation* as the process of analyzing and adjusting how some business model components are designed to create value for customers.

The extant literature lacks a causal study that examines a way to stimulate marketing strategy innovation (i.e., strategic shifting) and to measure the impact of such an intervention on firm performance. Despite a long history of empirical research on marketing strategies, particularly studies using PIMS databases (refer to Buzzell 2004 for an overview), there has not been a data source that allows us to measure whether an intervention that is intended to induce strategic change (a) does so and (b) affects firm performance. Our objectives in this study are twofold. First, we identify and implement an intervention that could encourage or induce firms to shift marketing strategies; and second, we use the current gold standard in measuring causal effects, a randomized controlled field experiment, to measure whether the intervention influences a specific measure of firm performance (i.e., sales).

Initial case studies suggest that shifting a strategy or changing a business model (i.e., pivoting) may happen because of a variety of triggers, such as learning new information (Kirtley and O'Mahony 2023), economic experimentation (Pillai et al. 2018), diversity in team composition (Leatherbee and Katila 2018), or lawsuits from patent trolls (Chien 2012). Inducing such events in a randomized fashion, however, appears unlikely. On the other hand, business advisory services (such as those undertaken by McKinsey, Bain, etc.) are more likely to induce strategic changes. Yet, the literature that has looked at these types of consulting interventions (e.g., Bloom et al. 2013, Bruhn et al. 2018) has focused on improving business *tactics* through a prescriptive approach, where the interest is in understanding whether firms implement new functional activities (e.g., best practices in managing operations, recording finances, or conducting marketing).[8] Such an intervention is also expensive to launch at scale. Alternatively, a related intervention is business coaching that involves the one-on-one interaction between a coach with business expertise and the leadership of a firm. Despite their fixture in start-up ecosystems like Silicon Valley, researchers have not explored the role played by coaches (e.g., advisors, board members) in questioning a firm's strategy and triggering a change in business model components. Given the ubiquitous presence of management professionals the world over (Herrington 2010, Murray 2011), their proclivity for volunteering (Cihlar 2004, Aguilera et al. 2007), and the increasing trends of virtual collaboration and Internet connectivity around the globe (International Telecommunication Union 2018, Lund et al. 2021), we view volunteer-led *virtual business coaching* as an intervention that could plausibly induce changes in business *strategies* (e.g., the 3Cs of marketing).

Given the previous discussion, a question that arises is: What are the contexts where we could study the causal impact of virtual business coaching on firm performance? Doing so in large businesses is infeasible for a variety of reasons—the need to have a large sample size, the professional nature of management in many of these enterprises and the associated agency issues, the absence of a focal person in the organization to receive the coaching, and the consequent difficulty in linking sales outcomes to the intervention. Thus, we focus on small firms that are run by founders or entrepreneurs. Although relevant for entrepreneurs globally, an intervention such as ours is likely to be particularly beneficial for those in emerging markets. Estimates suggest that there are around 400 million small firms across Africa, Asia, and Latin America, where they make up about 60% of employment and 40% of the gross domestic product (GDP).[9] Thus, improvements in business outcomes provide a way for entrepreneurs and the employees they lead to enhance their lives. In addition, these markets represent future growth opportunities for many multinational companies (Leke et al. 2018). Their marketing managers, tasked with expansion into these distant (and diverse) markets, will need to develop on-the-ground knowledge and close connections with local businesses.

Thus, to better understand marketing strategy innovation and its relationship with performance, we conducted a field experiment using a Skype-aided (i.e.,

virtual) coaching intervention that connects volunteer management professionals in primarily advanced markets and entrepreneurs in emerging markets to improve business outcomes. Our study addresses three novel research questions. (1) What is the effect of virtual business coaching on firm sales? (2) What is the mechanism through which this effect occurs? Specifically, does virtual coaching stimulate shifts in marketing strategy? (3) Do entrepreneurs benefit more from virtual coaching when they are less strategic in their decision making? These questions are not only of importance to an academic audience. Studying whether marketing interventions help (or hurt) small firms can offer valuable insights to entrepreneurs and marketing managers as well as to policy makers and investors.

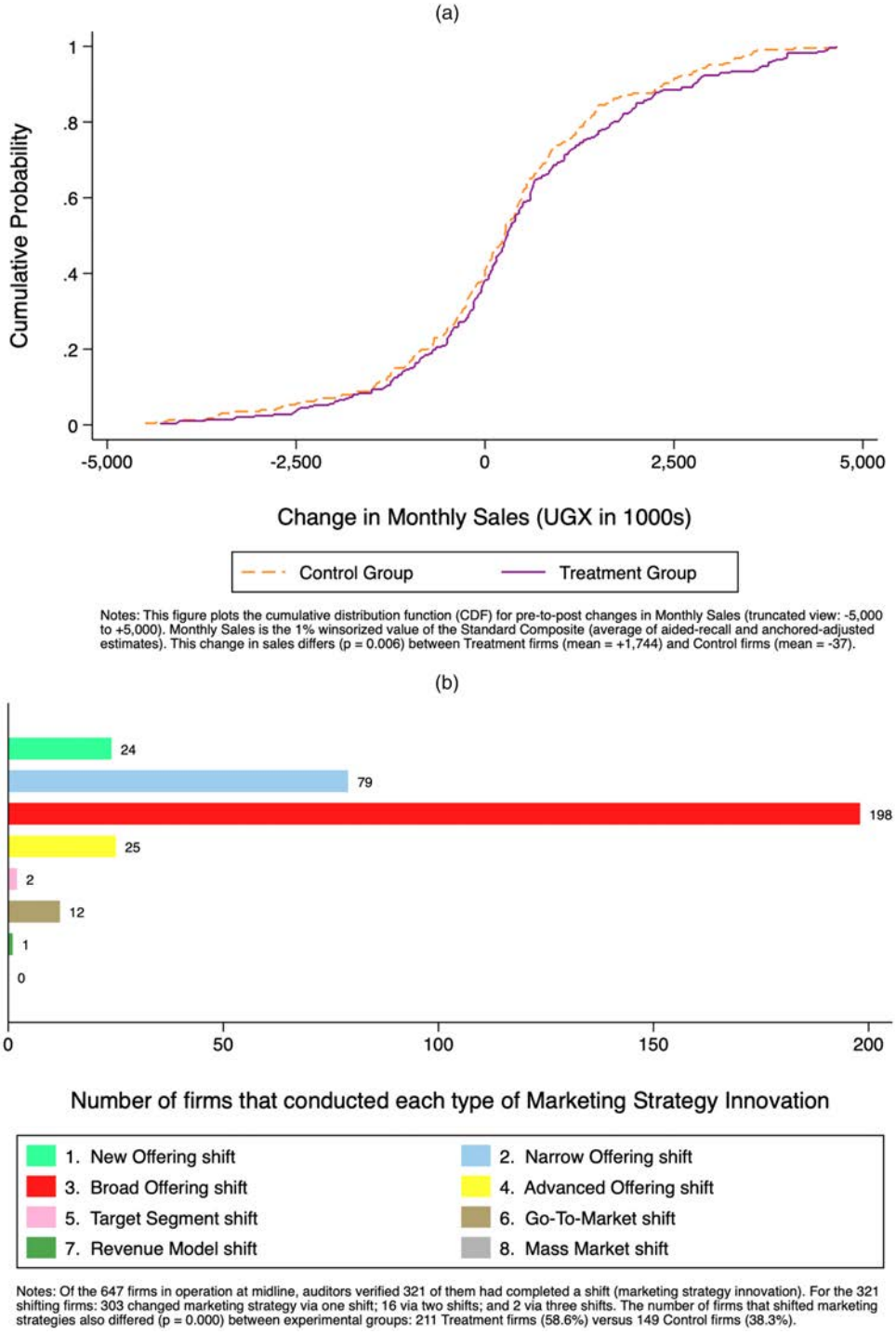
We implemented our field experiment with entrepreneurs in Uganda to identify the causal impact of virtual business coaching on strategies and sales. Given our objective of isolating changes in marketing strategies, we purposefully recruited more established firms already using a high number of business tactics (7.7 verified practices per firm on average).[10] This sample of 930 small firms was *randomly* assigned into a control group that received no intervention ($n = 400$) and a treatment group that was offered virtual coaching ($n = 530$). This intervention involved management professionals delivering free one-on-one business coaching via Skype videoconferencing, mobile calls, emails, and messaging apps. During every two-week module, the entrepreneur virtually met and interacted with her coach to analyze the business and consider various options and ways forward.

Our analysis results in three key findings. First, there is a positive and significant main effect of virtual business coaching on firm performance, which holds across the distribution of sales gains (see Figure 1(a)). Treatment firms increase monthly sales by 1.29 million Ugandan shillings (UGX; $352 United States Dollar (USD)) during the two-year study period.[11] This represents a 27.6% improvement and is equivalent to the monthly salary of approximately six employees or to approximately three months in rental costs for a small firm in our sample. Second, we find support for our proposed mechanism with impacts across different types of marketing strategy innovation (see Figure 1(b)). Overall, entrepreneurs who receive virtual coaching are 52.8% more likely to have shifted their marketing strategy in a new direction.[12] In addition to analyzing and adjusting business model components, these strategic shifts also resulted in more customer value creation. Additionally, although the treatment does not increase business tactics (as expected), the evidence suggests that performance improvements are greatest for firms that (i) shift their marketing strategy while (ii) maintaining a high number of business tactics. Third, the analysis shows that entrepreneurs who receive virtual coaching tend to do better when they (ex ante) lack strategic focus. Consistent with our mechanism, which focuses on inducing strategic business changes, these kinds of *less strategic* entrepreneurs achieve a 55.3% increase in monthly sales when offered the intervention.

This paper aims to make contributions to the literature in marketing and its related areas in entrepreneurship and management. One, this paper's focus on the causal impact of marketing strategy innovation established with the gold standard of a randomized controlled trial represents a first in the field of marketing. In doing so, we (i) operationalize and measure the marketing strategy innovation construct (via a new framework that categorizes different types of strategic shifts and outlines dimensions of analysis and adjustment) and (ii) exogenously stimulate marketing strategy innovation via our intervention and link it to performance (e.g., customer value, firm sales). Two, this paper also adds to research at the intersection of marketing and entrepreneurship. In recent years, the notion of pivoting or course correcting a business model has gained increasing attention in start-up ecosystems like Silicon Valley (Ries 2011). Yet, work on this phenomenon has largely been broad (i.e., changes of an entire business model across all functions of a company), high level (i.e., vague descriptions or examples without any verifiable measures), and anecdotal (i.e., case studies on software development in a handful of high-tech companies). By contrast, our definition of marketing strategy innovation focuses specifically on the subset of business model components related to redesigning a firm's value proposition: customers (who is buying), the company offering (what are they buying), and competition (why are they buying). We then empirically examine such shifts in marketing strategy through a causal study involving hundreds of firms over multiple years. To this end, the paper provides new insights that can be applied to business model design in entrepreneurship (e.g., Osterwalder and Pigneur 2013). Three, we advance knowledge in marketing and management by offering initial evidence on the efficacy of virtual collaboration technology. This is the first firm-level experiment to incorporate a virtual interaction approach that connects business professionals across markets to work together on improving firm outcomes. Understanding the link between remote working relationships and productivity is critical for a post Covid-19 world where virtual collaboration tools (e.g., Skype, Zoom, Slack) are indispensable in business (Newman 2020, Lund et al. 2021), whereas at the same time, 3.8 billion individuals use mobile internet devices to access knowledge, products, and other people (Bahia and Delaporte 2020). Our study demonstrates that strategic changes and performance gains are possible with virtual collaboration technology.

This paper also contributes to the development economics literature. First, the work on small firm growth has primarily focused on business practices or tactics as

Figure 1. (Color online) The Impact of Virtual Business Coaching



Notes. (a) Main effect: change in firm sales across the distribution. (b) Mechanism: marketing strategy innovation across types.

a theoretical mechanism (Bloom and Van Reenen 2007, McKenzie and Woodruff 2017). Our study provides empirical evidence on an additional channel for increasing firm performance: marketing strategy innovation. In fact, our analysis suggests that although business tactics and strategies are distinct constructs, they can be complementary; doing both well—shifting marketing strategy and implementing more business tactics—is associated with greater sales improvements. Second, within this research area, most studies focus on business characteristics (e.g., size, sector) when examining heterogeneous treatment effects. Additionally, if individual

characteristics are used for explaining variation in outcomes, it has largely been with a single demographic variable (e.g., age, gender). Such analysis also tends to be ex post in nature as a way of exploring when, or for whom, a particular intervention is more effective. By contrast, we study heterogeneous effects using multiple psychological variables that were designed a priori into a customized module of the baseline. These entrepreneur-level measures were combined to construct one overarching *strategic focus* composite, which in turn, allowed us to conduct interaction tests aligned with our theoretical mechanism of interest (i.e., changes in marketing strategy). Third, to the best of our knowledge, this is the first time that *international business coaching* has been rigorously studied and that its causal impact on firm sales has been empirically examined. The literature on small firm growth has typically used in-person and on-the-ground interventions involving local services (e.g., training or consulting) as a way to increase business performance. As an alternative, our study leverages a new approach that relies on management professionals from outside the country who volunteer to remotely coach local entrepreneurs. It is not only effective at enhancing firm performance but also scalable given its financial and logistical feasibility. Thus, international business coaching (via virtual collaboration technology) gives policy makers another tool for assisting entrepreneurs that can supplement the traditional support services offered already (e.g., training, loans, grants) and improve access to managerial capital.

The rest of the paper proceeds as follows. Section 2 develops hypotheses on virtual business coaching and marketing strategy innovation. Next, Section 3 discusses the intervention, whereas Section 4 describes the experimental design. Sections 5 and 6 present analyses and results. Lastly, Section 7 concludes.

2. Virtual Business Coaching and Marketing Strategy Innovation

Scholars agree that substantial growth can occur when entrepreneur-led ventures increase sales and expand (Schumpeter 1934, Drucker 1985). However, the reality is that few small firms manage to grow and scale up, especially in emerging markets (Schoar 2010, Hsieh and Klenow 2014). In addition to studies on the impact of financial capital (e.g., loans, grants), researchers have also examined the role of managerial capital in growing firms through greater use of business tactics or practices. The majority of this work has focused on improving access to an in-person training course or a face-to-face consulting service. Although a handful of interventions in this space have been successful, most have shown mixed results (McKenzie and Woodruff 2013). Thus, opportunities exist to improve on, as well as supplement, traditional business skills programs that rely primarily on in-person delivery (Woodruff 2018). In that regard, by using a different kind of intervention—one that can potentially engender strategic thinking about the business rather than encourage tactical implementing of practices—we offer *virtual business coaching* as one possible option.

Prior research has not examined the performance effects of an international business coaching intervention where remote professional interactions are facilitated across countries through virtual collaboration technology. On the one hand, training programs (e.g., Campos et al. 2017, Anderson et al. 2018) typically involve samples of microfirms led by subsistence entrepreneurs,[13] focus on owner-level education and building internally developed skills (with execution of tactical business practices), and provide standardized materials through one-to-many local interactions (i.e., instructor in a classroom). On the other hand, consulting programs (e.g., Bloom et al. 2013, Bruhn et al. 2018) generally involve samples of medium and large firms led by experienced managers, focus on organization-level assessment and accessing externally sourced skills (with adherence to a checklist of best practices or tactics), and provide customized materials through one-to-one local interactions (i.e., consultant at firm's business premises). In contrast, our coaching intervention caters to small firms led by growth-oriented entrepreneurs, focuses on *market-level* analysis (e.g., customer, company, competition) that can potentially induce adjustments in *strategy* (instead of concentrating only on tactical changes), and provides marketplace application through one-to-one *virtual interactions* (i.e., remote coach via Skype videoconferencing and mobile calls).

Despite the importance of noting these differences in managerial capital interventions, however, such characterizations can be overly simplistic and context specific. A more extensive review of this literature is outlined in McKenzie (2020). In particular, Bruhn et al. (2018) is the paper closest in spirit to our study. They focus on in-person consulting services and tactical-level changes in business practices—and do so with larger firms in a middle-income country. We focus on *virtual business coaching* as an intervention and strategic-level changes in business model components as a mechanism, and we run our study with smaller firms in a low-income country. In addition, a recent paper by Anderson et al. (2021b) examines how volunteer marketers help Ugandan entrepreneurs to grow their businesses. That paper leverages the same field study's recruitment and data collection process as our paper, but there are critical differences in the research questions, experimental design, outcome measures, data sets, and analysis of heterogeneous treatment effects. Appendix A provides a detailed comparison of these two studies and our study.

2.1. Virtual Business Coaching and Firm Sales

Given the inherent distinctions between *virtual business coaching* and the small firm growth interventions studied to date, we expect that making new business connections in this manner will lead to positive outcomes. Moreover, our coaching approach was designed to increase the overall strength of the intervention. Firm-level interventions can fail for a variety of reasons (see McKenzie and Woodruff 2013). One issue is that sample sizes are small and consist mainly of subsistence entrepreneurs. We recruit a sample of nearly 1,000 entrepreneurs and use multiple screening steps to ensure that they are growth oriented and running more established firms that already implement several business tactics. Two, interventions have historically used approaches that are not practical and content that is too theoretical (Woodruff 2018). We do not prescribe a rigid schedule or any predefined materials. Instead, the coach-entrepreneur interactions happen organically as they apply changes in response to the firm's unique product, customer, and market conditions. Three, past interventions may be weak overall because they involve only a few sessions and cannot be easily accessed given mobility barriers. We allow coaching projects to last up to six months (with most in the range of 6–10 weeks), and each module includes a business/marketplace assignment, frequent interactions with a coach (via Skype, mobile calls, email, and messaging apps), and regular check-ins by a client relations manager (CRM; who helps facilitate the coach-entrepreneur connection).

Taken together, a more intense coaching intervention—with opportunities for ongoing customization, feedback, and adjustment—can improve the chances for making lasting business changes that increase performance. Moreover, recent work also shows that interfirm relationships (e.g., between two or more business owners) can be effective in improving firm practices and performance (Cai and Szeidl 2018, Fafchamps and Quinn 2018). Such peer-based interactions are particularly useful when an entrepreneur is paired with higher-quality peers (Brooks et al. 2018). Although these studies mainly focus on skills and information transmission, they suggest that professional business interactions can induce positive changes. Similarly, we expect that connecting an emerging market entrepreneur with a more senior and experienced management professional from a different country can result in performance improvements. Following this line of reasoning, we propose our first hypothesis.

Hypothesis 1. *Entrepreneurs who receive virtual business coaching will increase firm sales more than entrepreneurs who do not receive such coaching.*

2.2. Marketing Strategy Innovation

In terms of mechanism, there are at least two routes through which virtual coaching may influence firm sales. The first is the more traditional route examined in prior research that focuses predominantly on improving business tactics or practices (see Bloom et al. 2013; McKenzie and Woodruff 2013, 2017). Given the expertise and experiences of our international coaches, we expect some skills transfer of this kind to inevitably occur. Nevertheless, we recognize that given a virtual coach's lack of contextual knowledge of the entrepreneur's business, it is difficult to effectively train someone on the other side of the world via email, phone, and Skype. For instance, a remotely located coach cannot directly change a particular practice inside the business (e.g., pricing, promotions, product placement) or increase a specific ability of the entrepreneur (e.g., numeracy, literacy, etc.). Instead, a second route for influencing firm sales is via changes in marketing strategy (or strategic shifts). When interacting one to one, the coach is more likely to be successful in getting the entrepreneur to analyze customers, the company's offering, and competition so that together they can better understand the business model and challenges to sales growth. Moreover, the one-on-one exchanges allow the coach to be a regular sounding board and give customized feedback that supports the entrepreneur in adjusting business model components related to the firm's value proposition.

2.2.1. Strategic Shifting. Like a Silicon Valley entrepreneur, an emerging market entrepreneur can examine the 3Cs of marketing (customers, company, competition) and then, shift strategic directions in a way that creates value for customers—and also the firm via greater sales. However, the impetus for starting down this path is not likely to come from a miraculous light bulb moment. Instead, it is more likely that an outside trigger induces the entrepreneur to question her current business model, analyze its components, and identify optimal strategic adjustments (Chien 2012, Leatherbee and Katila 2018, Pillai et al. 2018, Kirtley and O'Mahony 2023). Skyping with an international business coach represents one such trigger for emerging market entrepreneurs, especially given the prevalence of geographic and social mobility constraints.

Thus, we hypothesize that virtual business coaching is less likely to prompt *additional* marketing tactics (or practices) but more likely to effect changes in marketing strategy, which in turn, can influence the nature of business practices the firm undertakes. We fully recognize that distinguishing between strategic and tactical changes is not a trivial task and can be viewed as a subjective judgement. Nevertheless, for our purposes here, we believe it is important to distinguish between these two kinds of change given the unique nature of the *virtual business coaching* intervention we study. Although operational definitions of what constitutes a tactic or practice are available in the literature (see Bloom et al. 2013; McKenzie and Woodruff 2013, 2017; Campos et al. 2017),

a corresponding operationalization for changes that are more strategic in nature is not readily available. Thus, following the recent management literature on business models and pivoting (e.g., Zott and Amit 2007, Teece 2010, Ries 2011, Osterwalder and Pigneur 2013, Foss and Saebi 2016), we define *marketing strategy innovation* (or strategic shifting) as the process of analyzing and adjusting how some business model components are designed to create value for customers.

As outlined in our conceptual framework (see Appendix B), we propose two necessary conditions for a business change to qualify as a marketing strategy innovation. First, there must be a systematic Analysis of the subset of business model components related to the firm's value proposition: (i) *customers and segmentation* (who is buying; e.g., needs/problems to be addressed, characteristics of target market, preferences, market sizing), (ii) the *company and targeting* (what are they buying; e.g., product/service offering, benefits or solutions to be provided, product economics, firm resources), and (iii) *competition and positioning* (why are they buying; e.g., advantages over alternatives, performance or attractiveness versus other players, promises, defensibility). Second, there must also be an *intentional Adjustment in* where the firm directs its focus as components of the current business model get modified: (i) *stopping* (i.e., quit focusing on previous components in a purposeful attempt to change the value proposition), (ii) *starting* (i.e., begin focusing on new components in ways that lead to a different value proposition), and (iii) *spending* (i.e., allocate time, money, or people resources while redesigning the value proposition). Not all strategic changes will necessarily reflect these dimensions to the same extent. However, collectively they represent what, we believe, a shift in marketing strategy entails.[14]

The academic literature has also proposed that firm performance can be linked to adjustments in the business model components if these strategic marketing changes lead to new sources of competitive advantage (Christensen 2001, Chesbrough 2010). In the management literature, it has been suggested that innovating a business model or its components can positively influence the performance of entrepreneurial and established firms, including increases in new product sales, market expansion, and profitability (Zott and Amit 2007, Cucculelli and Bettinelli 2015). Moreover, primarily through analysis of manager surveys and secondary data sets, marketing researchers have also proposed that a positive relationship exists between the effectiveness of a firm's marketing strategy (or marketing function) and its performance, including improvements in metrics related to customers, pricing, sales, profitability, and market share (see, for example, Narver and Slater 1990, Day 1994, Boulding and Staelin 1995, Moorman and Rust 1999, Buzzell 2004). Based on this and the preceding logic, we provide the following hypothesis.[15]

Hypothesis 2(a). *Entrepreneurs who receive virtual business coaching are more likely to shift their marketing strategies than entrepreneurs who do not receive such coaching.*

2.2.2. Customer Value. Next, for a change in marketing strategy to translate into performance improvements (e.g., higher sales), such a change should result in the entrepreneur providing greater value to her customers. As noted, an international business coach may bring a broader scope of attention and focus on a wider set of activities (Chattopadhyay et al. 2001), so through regular interactions, the entrepreneur gets nudged to look at her offering or market context from a different viewpoint. Also, the business coach likely has a general sense that 'more is out there' (given prior professional experiences) and in turn, will reject the status quo and encourage the entrepreneur to obtain more information—for example, by going out and talking to customers to better understand their needs or seeing what competitors are offering (Day 1994). Importantly, however, the coach has likely been exposed to a myriad of business sectors and customer solutions that provide mental models of 'how things are done elsewhere' (Aarts and Dijksterhuis 2000). Consequently, the coach may be well positioned to support the entrepreneur in examining customer insights and figuring out what else she could do with the materials, equipment, and skills she already has to redesign the company's value proposition. Such strategic changes may increase customer satisfaction or improve how their needs are met, which can also benefit the firm (e.g., via greater loyalty, higher willingness to pay, more positive word of mouth). In sum, a strategic marketing shift can enhance firm performance by enabling entrepreneurs to provide more value to their customers. We reflect this in our next hypothesis.

Hypothesis 2(b). *Entrepreneurs who receive virtual business coaching will create greater customer value than entrepreneurs who do not receive such coaching.*

2.2.3. Strategic Focus. Not all entrepreneurs will do equally well from receiving virtual business coaching. We expect variation in returns to this intervention. Our proposed mechanism predicts that virtual coaching will lead to increases in firm sales by stimulating greater marketing strategy innovation. These shifts require making strategic changes in the business, and thus, we expect entrepreneurs who tend to be *less strategic* in their decision-making approaches to benefit more from virtual coaching. Interacting with an experienced management professional from a different market context can help such entrepreneurs to overcome deficits in their strategic focus. For instance, the coach can help the entrepreneur take a more forward-looking view that considers implications and outcomes in the future, as well as encourages better planning of activities and resources (Frederick et al.

2002). Having a range of professional experiences also reduces biased judgments that occur from relying only on easily available information (Tversky and Kahneman 1974), and so, the coach could push the entrepreneur to be systematic when conducting market research and analyzing the 3Cs. In addition, through diverse interactions with a coach from a different context and culture, the entrepreneur may enhance her capacity for creative problem solving and making novel associations (Simon 1985, Leung et al. 2008), which helps spur adjustments in the business. Overall, with its focus on making strategic changes, we expect virtual coaching to be more useful for entrepreneurs who tend to be less strategic to begin with. This is reflected in our final hypothesis.

Hypothesis 2(c). *Entrepreneurs who receive virtual business coaching will increase firm sales to a greater extent when these entrepreneurs (ex ante) lack less strategic.*

3. Intervention

Lessons from prior work on small firm growth suggest that it is critical that the intervention be both intense (e.g., longer duration, higher frequency, focused on a small set of key concepts/changes) and practical (e.g., tools relevant to the context, exercises that encourage implementation, repeated application to one's business) (see McKenzie and Woodruff 2013, 2017). Our intervention included several months of high-quality virtual coaching from volunteer management professionals across markets (see Appendix C for an overview).

3.1. Intervention Description

3.1.1. Coaches. Our partner, Grow Movement, recruited 530 management professionals from over 50 countries to be coaches for our study sample.[16] The coach could be a master of business administration (MBA) graduate in Chicago, a management consultant in London, or a start-up veteran in San Francisco—all with valuable knowledge and a desire to help emerging market entrepreneurs succeed. Grow Movement's volunteer coaches typically have (i) a minimum of five years of commercial experience postcollege; (ii) experience in improving business performance through running their own firm, working in a corporate environment, management consulting, or working with small businesses; (iii) a professional qualification (e.g., master of business administration (MBA), chartered accountant (CA), juris doctor (JD)); and (iv) experience mentoring or coaching (or possibly time spent working in Africa). Coaches were recruited between March and July 2015 from sources such as referrals from past coaches (26%), business school students and alumni (22%), professional bodies and associations (17%), volunteering websites and platforms (10%), and social media (9%). Coaches applied through Grow Movement's website. Applications were then screened by Grow Movement staff and trustees, and candidates were interviewed prior to being accepted (or not) into the program. This interview also doubled as a briefing, whereby potential coaches were given more information about the logistics of the program and advice on the cultural and business context of small-scale entrepreneurs in Uganda.

3.1.2. Client Relations Managers. As part of Grow Movement's implementation protocol, every project between an international coach and a Ugandan entrepreneur (client) was supported by a local CRM responsible for ensuring that each coach-entrepreneur relationship progressed. Ten CRMs (recruited and managed by one Ugandan team leader) were added in May 2015 to boost the capacity of Grow Uganda's existing CRM team for the duration of the study intervention. The team underwent a two-week training to introduce them to Grow Movement's mission, vision, and modus operandi; explain the intervention's goals and timelines; outline guidelines for how best to manage projects; and provide practical training in effectively writing emails and managing coaches. CRMs were then stationed at one of five internet cafes around Kampala, where Grow Movement hired some dedicated computer stations and cubicles for their entrepreneur clients to use. These internet cafes acted as temporary field offices and provided a reasonably private working environment.[17]

3.1.3. Compliance. Once the coach-entrepreneur assignments had been made (August 2015), the CRMs sent introductory emails to all their coaches (around 50 each) to welcome them to the program and explain their support role. These emails were also scripted to ensure consistency and accuracy in communication with coaches. Coaches were responsible for getting in touch with their entrepreneurs to introduce themselves and schedule the first meeting. They then informed the CRM of the date of this meeting. CRMs were required to host the first meeting between the coach and entrepreneur via Skype videoconferencing, preferably at the entrepreneur's business location to allow the coach to see the business. For this purpose, CRMs were equipped with project computers and internet dongles, and they were provided with monthly data allowances. In addition, CRMs were required to facilitate the second or third module to ensure that every project had completed the first stage of problem identification and goal setting (Stage A Compliance). CRMs would also facilitate two to three modules in the second stage to encourage entrepreneurs to achieve project goals (Stage B Compliance). The CRMs tracked the progress of their coach-entrepreneur projects using a Tracker Sheet (which was also monitored weekly by the team leader and senior manager). CRMs would enter module timelines and milestones into their own calendars with a reminder to follow up with coaches (via email) and entrepreneurs (via phone calls) two days

before each module's scheduled completion date. Once a module was completed, coaches were responsible for updating the partner's project management system with notes on what was discussed during the module, whether assignments had been set / completed, and the next module completion date. To ensure that projects remained on track, CRMs regularly contacted entrepreneurs and coaches via calls, emails, and short messages (e.g., SMS or WhatsApp).

3.1.4. Content. Over a period of six months, each entrepreneur interacted one on one with her coach via Skype videoconferencing, mobile calls, emails, and messaging apps to make choices and changes for the business. *The content of the program was not prescriptive*. The coach had discretion to guide the project and tailor the topics, assignments, and activities to the specific context and challenges faced by the entrepreneur. In Stage A (modules 1 and 2), the coaches would typically be expected to support the entrepreneur in understanding the business model, analyzing the value proposition, identifying impediments to sales growth, and setting goals. In Stage B (modules 3–12), the coach and entrepreneur collaborated to complete assignments, review strategies, and make adjustments to take advantage of opportunities. These coaches were likely to provide a different viewpoint about the firm's offering and market context based on their understanding of the entrepreneur's business and their own experiences. Online Appendix 1 provides examples of two coaching projects. The coaching interactions appear to stimulate an entrepreneur to start focusing on value and ways to shift strategies that create more value for customers. Although a shift might not occur immediately, the examples show how ongoing analysis and feedback during initial modules lay the foundation for future adjustments that could potentially lead to a strategic marketing shift.

3.2. Intervention Strength

3.2.1. Quantity. As shown in Online Appendix 2(a), adoption of the intervention was fairly high, with 88% of those offered coaching actually completing at least 1 of 12 modules (as a comparison, Bruhn et al. 2018 had a take-up rate of 53%). This take-up hurdle was nontrivial. It required the entrepreneur to coordinate schedules with a CRM, commit to a date/time for two-plus hours of initial coaching, attend a one-on-one Skype videoconference call with an international management professional (all in a second language, English), and then, complete follow-up exercises and additional coaching calls during the subsequent two weeks. In terms of compliance, 71% of treatment firms completed at least two modules or roughly four weeks of the intervention. Our coaching partner refers to this as Stage A, which involves understanding the business model, analyzing the value proposition, identifying sales growth challenges, and setting goals for changes to be made through the project. In addition, the completion of five modules (approximately 10 weeks of coaching) is a major milestone given that multiple field-based marketplace assignments and business model adjustments could have been completed by this juncture. The Stage B milestone was reached by 50% of our treatment group firms. Additionally, for those entrepreneurs who did not complete at least five modules, the reasons for noncompliance ranged from firm failure and time constraints to personal tragedies and program issues (see Online Appendix 2(b)). Across all participants who adopted the program, there was also an average of 8.5 live interactions (via Skype and mobile calls) reported between entrepreneurs and coaches during each project. Overall, this virtual coaching intervention appears to represent a fairly intense option for encouraging business changes in small emerging market firms.

3.2.2. Quality. In addition to the high quantity of coaching exposure, the intervention quality was also high. Evaluations of the coaching intervention were quite positive from both CRMs overseeing the program and entrepreneurs participating in it. First, using a 1–7 scale (strongly disagree to strongly agree, respectively), the client managers rated entrepreneur performance above 5 on all factors (see Online Appendix 3(a)): attendance, commitment, application, assignments, and independence (average of 5.6). They also assessed coaches to be of high quality, scoring them above 6 on all criteria: attendance, relevance, effectiveness, understanding, and completion (average of 6.4). Second, the feedback provided by entrepreneurs lends further support to the strength of this intervention (see Online Appendix 3(b)). The average score across 10 evaluation questions was 6.1 (of 7). These coaching participants were highly satisfied, increased their confidence, and would recommend the program to others. They also found the concepts to be relevant, the tasks to be applicable to their business, and the interactions with coaches to be enjoyable. Importantly, entrepreneurs believed the coaching intervention helped their business and assisted them in changing their strategies.

In sum, Online Appendices 2 and 3 show that the completion and evaluation of our virtual business coaching intervention were high. This suggests that the intervention is strong enough to stimulate changes in firms.

3.3. Intervention Checks

In addition, we conduct checks to rule out systematic differences in how the intervention was implemented. Within the treatment group, roughly half of the firms ($n = 265$) completed ~10 weeks of the coaching intervention (i.e., Stage B compliance). We refer to these firms as being 'treated' and the remaining firms in the treatment group that did not fully comply as being 'non-treated'. We begin by running multiple tests that confirm *uniformity* in the handling of treated and nontreated firms

based on geographic markets (Online Appendix 4(a)), industry subsectors (Online Appendix 4(b)), and intervention characteristics (Online Appendix 4(c)). Next, evidence from a series of *comparability* checks suggests that our virtual coaching intervention was implemented at a similar level of quality across firms with respect to entrepreneur quality (Online Appendix 5(a)), intervention quality (Online Appendix 5(b)), and coach quality (Online Appendices 5(c) and 5(d)). Finally, our *spillover* analysis concludes that intervention spillovers and interference: were not plausible on a large scale given the physical distances separating firms (Online Appendix 6(a)); did not materially influence the intervention activities of treatment firms (Online Appendix 6(b)); and did not significantly affect the investment activities of control firms (Online Appendix 6(c)).

4. Experimental Design

Empirically examining marketing strategy innovation is difficult to do with secondary data and a backward-looking research design. First, there are no available databases for accessing details on whether and how a large sample of firms changes their marketing strategies, as well as for measuring dimensions of these shifts and linking them to firm performance. Second, even if it existed, such data would likely be historical and descriptive in nature; thus, inferences are more correlational than causal. Several factors would bias our efforts to identify the effect of *virtual business coaching* on firm strategies and sales, including: omitted variables (e.g., unobserved entrepreneur and firm characteristics could be driving changes in performance); self-selection (the choice to engage in coaching might be influenced by reasons unknown to the researcher); or reverse causality (e.g., higher sales may be required first so that an entrepreneur has the size to attract a coach). To address these empirical issues, we conducted a field experiment in which 930 small firms were randomly assigned to a treatment group ($n = 530$) or control group ($n = 400$) and then tracked for 24 months.[18]

4.1. Pre Randomization: Timeline

Appendix D, Figure D.1 outlines the study timeline, including survey rounds and sample sizes. As shown, we implemented two rounds of data collection prior to randomization (i.e., recruiting and baseline surveys).[19] All surveys were conducted at the entrepreneur's business location by an independent enumerator—as well as an unannounced auditor when additional verification was required. The *recruiting* survey contained questions on entrepreneur and business characteristics to be used for constructing the screening scorecard and/or for including as controls in the main analysis. The *baseline* survey also contained some business background questions but mainly focused on gathering financial data (for triangulating on the monthly sales estimate), as well as sections for measuring the entrepreneur's pre intervention level of strategic focus.

4.2. Sample Recruitment

Given that large and representative listings of entrepreneurs rarely exist (e.g., via government or secondary sources), we obtained our study sample through four steps. In step 1 (January to March 2015), a team of 15 enumerators went door to door to roughly 20,000 small firms across greater Kampala, Uganda. Enumerators systematically covered all business hot spots where small firms were known to operate from. Next, they approached any small firm operating out of a physical structure (e.g., shipping container, brick-and-mortar building) and asked to speak to the business owner (i.e., main decision maker). The owner entrepreneurs were informed about the intervention—an international business coaching program—and given a brochure with details. If their English skills were deemed good enough to converse with a coach, they were invited to apply by completing a 30-minute recruiting survey conducted by the enumerator. A total of 4,043 recruiting surveys were completed through this step.[20] Given our broad and methodical recruitment approach, we believe that this sampling frame is reasonably representative of more established small firms in urban Uganda (and not microsubsistence enterprises)—as the entrepreneurs were motivated to complete a survey, expressed interest in a business support program, operated out of a physical structure, and could converse in English. Online Appendix 8 displays the locations of firms in the sampling frame.

In step 2 (April 2015), nine factors from the recruiting survey were used to build a screening Scorecard composite: endowment (start-up capital invested), established (location structure and duration), employee (regular and paid worker), effectiveness (organized with internal affairs), experimentation (starts new activities or innovations), education (formal schooling and business programs), experience (prior salaried company job), exposure (visited other countries), and external (aware of other players in ecosystem). A scorecard approach was implemented, whereby each factor was allocated a certain number of points (e.g., 5–15 points per factor). The overall score ranges from 0 to 100 points. This composite was computed for all 4,043 firms in our sampling frame. Those with a higher screening score (at least 51 points) proceeded.[21]

In step 3 (May to June 2015), a baseline survey was implemented. The 1,522 higher scoring, growth-oriented entrepreneurs were contacted to advance in the process. They were told that a member of our field team would need to complete a business site visit and 90-minute audit of their activities (i.e., baseline survey). A total of 1,254 baseline surveys were completed, with these entrepreneurs continuing to the next stage.

In step 4 (July to August 2015), the qualifying 1,254 entrepreneurs were invited to a registration meeting with their CRM to learn more about the coaching program and complete extra forms. Our partner conducted these gating interviews at five satellite offices across greater Kampala. This hurdle was also used as a final test of suitability and commitment to participate. During the registration step, attendees were told that because of popular demand, there were more people interested in the program than there were available spots this year, so a lottery would determine who gets the coaching now versus in the future. This helped to maintain commitment during the study and minimize attrition from the control group. The partner passed about 75% of them. In the end, after multiple screening steps, our sample included 930 growth-oriented entrepreneurs running more established small firms in Uganda (see Online Appendix 8 for locations).[22]

4.3. Description of Study Sample

Appendix E displays summary statistics in column (1) for describing our full sample at baseline ($n = 930$ firms). The complete set of entrepreneur and business characteristics (used as controls in the main analysis) is included. In terms of entrepreneur characteristics, we see that 40% of the sample is female and that the large majority (99%) are local Ugandans. The typical entrepreneur is 31 years old, has 2.3 children, and completed high school or higher education. On average, 55% have received some kind of business program before (e.g., training course, advising help), 54% are married, and 46% have previously owned a business. In terms of the typical firm's profile, we see that 70% are run by the founder, 13% have previously had a loan with a formal institution, 74% separate business and personal affairs, and 22% are formally registered. There is also variation in industry with firms operating across a range of subsectors in manufacturing, retail trade, and services, thereby enhancing generalizability of the study's results (refer to Online Appendix 11).

Moreover, given our sample recruitment procedure, these are not micro-subsistence enterprises. The average firm in our sample has been in operation for 3.9 years, operates out of a standalone shop (or larger physical structure), has 1.7 paid employees, owns assets valued at 15.9 million UGX (~$4,300 USD), and has a monthly sales turnover of 5 million UGX (~$1,350 USD). The entrepreneurs themselves work 6.5 days per week in their firms, which further highlights that these businesses are not simply hobbies or side jobs for them. In addition, the average firm in our sample was using 7.7 business tactics, including multiple operational, marketing, and financial practices. This is aligned with our research objective to purposefully recruit firms already implementing a high number of tactics so that our experiment can better isolate strategic business changes. Thus, as intended, we ended up with a study sample of 930 growth-oriented entrepreneurs in urban Uganda who were running more established firms and using several business tactics.

4.4. Randomization and Balance Checks

This sample was subsequently randomized into two groups (August 2015): *530 treatment firms* (who received a virtual coaching intervention) and *400 control firms* (who did not receive any intervention but were recruited and surveyed in the same manner). Random assignment was done by computer, so any group differences are because of chance. Table E.1 in Appendix E outlines randomization checks for the full sample at baseline. Column (2) provides means and standard errors for the control group, whereas column (3) presents the same values for the treatment group. Column (4) outlines equality of means tests (t tests) between the two experimental groups. The value displayed for each t test is the difference between the control group mean and treatment group mean. Statistically significant differences are denoted with an asterisk. Overall, the results shown in Table E.1 in Appendix E provide evidence that randomization (of firms into experimental groups) was successful. The F test for joint significance of all variables is not significant. Additionally, of the 36 t tests, there was only one statistically significant difference, which would be expected by chance. That said, we still control for many entrepreneur and business characteristics (via their baseline variables) in all regression analyses to account for any imbalances on observables between the two experimental groups.[23]

4.5. Post Randomization: Timeline

After randomization, the virtual coaching intervention was launched and took place from August 2015 to July 2016 (see Appendix D, Figure D.1). We visited all sample firms for a midline survey (~18 months post baseline) and again for an endline survey (~24 months post baseline). The *midline* survey concentrated on measuring the intermediate effects of the intervention (namely whether changes in marketing strategies or shifts had taken place since baseline) and ruling out alternative explanations (namely differences in the number of business tactics or practices). The *endline* survey closely mirrored the baseline to ensure that the same financial information (e.g., monthly sales) was collected post intervention. Thus, the *midline* survey focused on mechanism evidence, whereas the *endline* survey focused on main effect evidence (see Appendix D, Figure D.2).

4.6. Experimental Validity Checks

Multiple checks were conducted to ensure that experimental validity was maintained throughout the study period. First, the *data collection* process followed rigorous audit and verification steps for every completed

survey in every round (refer to Online Appendix 13 for details). Further tests also show that there are no systematic differences in the proportion of treatment and control firms assigned to each enumerator at baseline (Online Appendix 13(a)), midline (Online Appendix 13(b)), or endline (Online Appendix 13(c)). Additionally, for each data collection round, there do not appear to be any patterns in which the dependent variable measures differ significantly across enumerators (Online Appendix 13(d)). Second, checks on the *experimental groups* confirm that treatment and control firms were handled in a comparable manner according to when measurement occurred (Online Appendix 14(a)), where they were located across geographic markets (Online Appendix 14(b)), and which industry subsectors they operated in (Online Appendix 14(c)). Third, *attrition* was low and nonsystematic. We were able to reach 78% of our sample at midline and 79% of them at endline, with additional analyses ruling out that any differential attrition occurred in the treatment group compared with the control group (Online Appendix 15). Considered together, these checks provide assurance that the experiment was rigorously implemented. In particular, randomization was not only successful initially, but this group balance was also maintained throughout the study period. We, therefore, feel confident that the control group represents a valid counterfactual for the treatment group in our main analysis that follows.

4.7. Survival Checks

Given our recruitment steps and the partner's gating interviews, all firms were operational at baseline. Our sample did not include any presales start-ups or idea-only entrepreneurs. By midline, 89.6% of firms had survived (of 722 surveyed). Additionally, 82.7% of firms were operational at endline (of 735 surveyed). Online Appendix 16 presents regression analysis to compare survival rates between the two experimental groups—separately for midline in columns (1) and (2), endline in columns (3) and (4), and both survey rounds in columns (5) and (6). The analysis does not detect any differential effects on business survival. Indeed, the survival rates tend to be fairly high in both our treatment and control groups, which may be partly attributable to our recruitment of more established firms and growth-oriented entrepreneurs into the study sample.

4.8. Empirical Specification

Given our random assignment of entrepreneurs to experimental groups, we estimate the effect of virtual business coaching as the difference in average outcomes in the treatment and control firms (at midline or endline) using the intention-to-treat (ITT) regression specified in Equation (1):

$$Y_i = \alpha + \beta_1 Coaching_i + \sum \gamma_s d_{i.s} + \delta Y_{i,b} + \varepsilon_i \qquad (1)$$

Y_i is the dependent variable, or outcome of interest (e.g., sales, strategic shifts), for firm i at midline or endline. The variable $Coaching_i$ is a treatment dummy that indicates whether a firm was randomly assigned to the virtual coaching intervention. $d_{i.s}$ comprises a set of control variables measured pre intervention, including 10 controls for entrepreneur characteristics at baseline (gender, age, ethnicity, marital status, children, education level, business program, prior salaried job, previous ownership experience, commitment), 15 controls for business characteristics at baseline (founder, operating years, start-up capital, formal loans, separation of business-personal affairs, days open per week, sales frequency, physical premises, registration, business practices, total products size, business-to-business (B2B) customers, markets outside city, total paid employees, total assets), and 10 industry fixed effects (the full set of one-digit standard industry classification (SIC) codes). These controls are included to improve precision of estimates as well as to account for any group imbalances because of attrition or spurious correlations when interaction analyses are performed. Equation (1) also controls for the baseline value of the dependent variable, $Y_{i,b}$ (whenever this outcome was measured at baseline). Robust standard errors are reported in all results. For the most part, if Y_i is continuous (e.g., sales), then we estimate Equation (1) via an ordinary least squares (OLS) regression, and if Y_i is binary (e.g., strategic shifts), then we use a probit model.

Throughout our analysis and discussion, we focus on the ITT effect, which provides an unbiased estimate of the impact of virtual coaching on firm sales or strategic shifts. These ITT results represent the cleanest identification of treatment effects given they rely on an exogenous source of variation (randomization into experimental groups). However, as needed, we also analyze the average treatment-on-treated (ATT) by estimating the effect on sales via an instrumental variables (IV) regression in which coaching compliance (minimum of two modules completed) is instrumented with coaching offer (randomly assigned).[24]

5. Analysis of Main Effects

We use a series of regression analyses to test our main effect hypothesis developed in Section 2 (see also Appendix D, Figure D.2). We first outline our measures of firm sales and how these are used to construct composites for analysis. Then, we report results for the impact of virtual business coaching on firm sales followed by robustness checks. Unless otherwise noted, all our analyses are performed using the complete set of entrepreneurs who (i) completed the survey round and (ii) were still in operation (at midline or endline).[25]

5.1. Measurement of Firm Sales

The dependent variable used for identifying the main effect of virtual coaching on firm performance is *Monthly*

Sales. First, our conceptualization of marketing strategy innovation links these strategic changes with customer value creation and thus, is directly related to firm sales (e.g., via increases in loyalty and quantity demanded, willingness to pay and prices, satisfaction and spending per order). Second, marketers—practitioners and academics alike—recognize sales as a key performance indicator that should be tracked and impacted through marketing efforts (Bendle et al. 2017). Third, given that revenue (or the money collected from customers) is better understood and more salient to emerging market entrepreneurs, sales is a crucial outcome used by researchers studying small firm growth in these contexts (e.g., McKenzie and Woodruff 2017). Measuring performance for small businesses in these contexts, however, can be challenging because secondary databases do not exist, and many firms do not maintain financial records (De Mel et al. 2009).[26] We, therefore, rely on a novel electronic survey tool that implements triangulation and iteration techniques to obtain estimates of firm sales that are more accurate and precise (see Anderson et al. 2021a). Online Appendix 17 describes the four measures in detail: *Firm Sales #1* (aided-recall values), *Firm Sales #2* (averaged values), *Firm Sales #3* (aggregated values), and *Firm Sales #4* (anchored-adjusted values).[27] For analysis purposes, two composite measures were constructed based on these values. The first was a Standard Composite Measure, computed by calculating the average of *Firm Sales #1* and *Firm Sales #4*. The second was an Additional Composite Measure, computed by calculating the average of *Firm Sales #1*, *Firm Sales #2*, *Firm Sales #3*, and *Firm Sales #4*.

5.2. Impact of Virtual Coaching on Firm Sales

Initial model-free evidence suggests a positive impact of virtual coaching on firm sales. Although monthly sales did not differ between groups at baseline, the average change in monthly sales for the treatment group (+1,744,208 UGX) is significantly larger than for the control group (−36,963 UGX) (see Online Appendix 18). Further, this positive sales effect does not seem to be driven by a handful of outliers in the treatment group. First, as noted in the measurement section, all sales variables were winsorized 1% on both tails (before composites were constructed). This helps guard against extreme values pulling the treatment mean higher. Second, Figure 1(a) plots the cumulative distribution functions for the treatment and control groups. It depicts a rightward shift in sales for firms offered virtual coaching. In other words, treatment firms realized a larger change in monthly sales than control firms across the distribution of sales gains. Third, as robustness to further address outlier concerns, we rerun our analysis with a different functional form of the main sales dependent variable (akin to a log transformation) and obtain qualitatively similar results.

Importantly, this model-free evidence is supported by the regression analysis, where we also find a significant and positive treatment effect of virtual coaching on firm sales. These results are reported in Table 1, where columns (1)–(4) use the Standard Composite measure of monthly sales (average of the aided-recall estimate and the anchored-adjusted estimate) and columns (5)–(8) employ an alternative version of this dependent variable (i.e., the Additional Composite measure that averages all four sales values). Given its customary use in small firm research (Anderson et al. 2018), we choose to focus our discussion on the Standard Composite measure of firm sales—although our results are not qualitatively different across the two measures. The ITT analysis in columns (1) and (2) shows that firms offered the virtual coaching intervention increase their monthly sales in the range of 27.6%–32.4% (0.16–0.19 standard deviation). In addition, the average treatment effects on the treated (ATT) are stronger. For entrepreneurs who completed at least two modules of coaching (Stage B Compliers), the improvement in monthly sales ranges from 36.0% to 42.7% (0.21–0.25 standard deviations). These results support Hypothesis 1.

5.3. Robustness Checks

We next implement several robustness checks for the main effect of virtual coaching on firm sales. First, four *bounding exercises* are carried out to account for any potential group imbalances because of attrition (Online Appendix 19(a)). The results continue to show positive and significant ITT effect sizes, with some larger than the corresponding specification in Table 1. Second, we rerun our analysis using *alternative sales measures* (Online Appendix 19(b)). A significant treatment effect is maintained across models, regardless of whether dependent variables are operationalized as inverse hyperbolic sine (IHS) transformations (e.g., Standard Composite, Additional Composite)[28] or component measures (e.g., Firm Sales #1, Firm Sales #4). Third, as a check against measurement error, we replicate our main effect results using *administrative data* from record-keeping firms (i.e., the sample for which official accounting records on firm sales were audited during data collection) (Online Appendix 19(c)). Fourth, we conduct our analysis again using *different ATT approaches* (e.g., higher/lower compliance levels, propensity score matching) and find positive and significant ATT effects across specifications (Online Appendix 19(d)). Finally, we allow controls to be selected by a two-stage *lasso estimator* and obtain qualitatively similar results to those in Table 1 (Online Appendix 19(e)). Taken together, this set of additional analyses provides robustness for our main effect results.

5.4. Analysis on Competition and Stealing

In a final set of checks (see Online Appendix 20), we perform distance analyses to rule out potential competition

Table 1. Impact of Virtual Coaching on Firm Sales (Main Effect)

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	Firm Sales				Firm Sales			
	Standard Composite Measure				Additional Composite Measure			
	ITT	ITT	ATT	ATT	ITT	ITT	ATT	ATT
Treatment: Offered coaching (yes = 1)	1,287.327** (573.730)	1,454.840** (569.102)			1,206.342** (585.986)	1,353.817** (603.044)		
Treatment complier: Completed at least 2 modules (yes = 1)			1,679.557** (749.524)	1,917.574*** (728.449)			1,574.024** (764.932)	1,784.536** (770.976)
Baseline value of dependent variable included	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Entrepreneur controls included (×10)	—	Yes	—	Yes	—	Yes	—	Yes
Business controls included (×15)	—	Yes	—	Yes	—	Yes	—	Yes
Industry fixed effects included (×10)	—	Yes	—	Yes	—	Yes	—	Yes
R^2	0.290	0.364	0.283	0.356	0.311	0.381	0.304	0.375
Sample size: Total	608	603	608	603	608	603	608	603
Sample size: Treatment or complier group	338	335	338	335	338	335	338	335
Control: Mean of dependent variable	4,662.500	4,487.407	4,662.500	4,487.407	4,815.098	4,679.403	4,815.098	4,679.403
Control: Standard deviation of dependent variable	8,209.284	7,637.581	8,209.284	7,637.581	8,558.232	8,236.126	8,558.232	8,236.126
Treatment effect: *p*-value	0.025	0.011	0.025	0.008	0.040	0.025	0.040	0.021
Effect size: Percent	27.610	32.421	36.023	42.732	25.053	28.931	32.689	38.136
Effect size: Standard deviation	0.157	0.190	0.205	0.251	0.141	0.164	0.184	0.217

Notes. This table summarizes analysis for the main effect of coaching on monthly sales (from baseline to endline). Columns (1)–(4) present the Standard Composite measure for sales (average of the aided-recall and anchored-adjusted estimates after winsorizing each 1% on both tails). Columns (5)–(8) present an Additional Composite measure for sales (average of four monthly sales estimates—aided recall, anchored adjusted, typical week converted monthly, and typical day converted monthly—after winsorizing each 1% on both tails). In each set of analyses, the left two columns present the ITT effects, and the right two columns present the ATT effects where coaching compliance (minimum of two modules completed) is instrumented with coaching offer (randomly assigned). All models are estimated using OLS regression. The indicated models include the baseline value of the dependent variable as well as 10 controls for entrepreneur characteristics at baseline (gender, age, ethnicity, marital status, children, education level, business program, prior salaried job, previous ownership experience, commitment), 15 controls for business characteristics at baseline (founder, operating years, start-up capital, formal loans, separation of business-personal affairs, days open per week, sales frequency, physical premises, registration, business practices, total products size, B2B customers, markets outside city, total paid employees, total assets), and 10 industry fixed effects (a full set of one-digit SIC codes: 01–09, 10–19, 20–29, 30–39, 40–49, 50–51, 52–59, 60–69, 70–79, 80–89). All regressions exclude firms that failed as at the endline (nonoperational with zero monthly sales); however, qualitatively similar results are obtained if such firms are included in the sample. All monthly sales values (if in levels) are listed as UGX in 1,000 s. Robust standard errors are in parentheses.

**Statistically significant *p*-value at the 5% significance level; ***statistically significant *p*-value at the 1% significance level.

and stealing explanations for our main results. First, columns (1) and (2) present interaction analyses using a continuous (or binary) measure of the *closest distance to any firm* (i.e., the straight distance in kilometers from the focal firm to the next closest firm in the sample computed based on the global positioning system (GPS) coordinates of each). In both cases, the interaction term is not significant, whereas the treatment coefficient in row (1) remains significant (with sign and size similar to those in Table 1). In other words, the impact of virtual coaching on firm sales is not affected by distance to another study firm. Second, columns (3) and (4) display results from the same analyses carried out using the distance between each firm and its closest control firm. Again, the interaction terms are not significant in either model, suggesting that the positive effects of virtual coaching cannot be fully explained by treatment firms competing and winning only against control firms. Third, we extend this competition and stealing analysis further by using the *closest distance to another sample firm in the same industry*. As shown in columns (5) and (6), the interaction terms are not significant. The impact of virtual coaching on sales does not appear to be influenced by how closely a competing firm (in the same industry) is located. Finally, we employ

measures of *market distance* for additional checks. Column (7) provides evidence that the virtual coaching effects do not significantly change if a treatment firm is located in a more competitive or higher-density market (i.e., a market with more than the median number of 25 sample firms). Moreover, as shown in column (8), controlling for variation in market density (by including a fixed effect for each geographic market) does not significantly change the treatment effect compared with our main results (in Table 1). Overall, although competition may exist, there are no systematic patterns across these checks to suggest that treatment firms are increasing their own sales simply by stealing from nearby firms (particularly not from control firms).[29]

5.5. Discussion

In support of Hypothesis 1, our main effect analysis finds that treatment firms significantly increase monthly sales by 27.6% (from baseline to endline). This impact of *virtual business coaching* on firm sales is robust to multiple model specifications, attrition, several measures of the dependent variable, measurement error, different compliance cutoffs in estimating ATT effects, various approaches for inclusion of control variables, and alternative explanations on competition and stealing. In addition, the effect sizes are both statistically and economically significant. As a result of virtual business coaching, the average firm in our treatment group increases monthly sales by 1,287,327 UGX ($352 USD). In terms of firm growth, this is equivalent to adding approximately six full-time employees (based on an average monthly salary of 210,340 UGX at baseline). Despite these promising results, however, the mechanism through which virtual coaching improves firm sales remains unresolved. We examine this next by testing whether our intervention stimulates changes in marketing strategies (or tactical business practices) as a way to enhance performance.

6. Analysis of Mechanism

The analyses conducted in this section test our mechanism hypotheses on (i) strategic shifting, (ii) customer value, and (iii) entrepreneur strategic focus (refer to Section 2). We begin by describing our measurement approach and construction of composites for analysis. Next, we provide evidence on our proposed mechanism of marketing strategy innovation. In addition, to further support our mechanism explanation, we examine heterogeneous treatment effects to test if virtual business coaching works better when entrepreneurs (ex ante) have lower strategic focus. Finally, we explore the extent to which our intervention stimulates strategic versus tactical changes in small firms, as well as the relationship between the two.

6.1. Measurement of Marketing Strategy Innovation

Given the absence of an established empirical framework to examine marketing strategy innovation, we needed to develop a method for measuring whether strategic shifts had actually occurred in our study firms. We began by conducting numerous focus groups and individually interviewed dozens of entrepreneurs in Kampala during the study's design phase (prior to launch) and after the intervention ended. Many of the international coaches also agreed to provide detailed insights on the types of strategic changes they focused on with their Ugandan entrepreneurs. Based on this qualitative work as well as a review of the recent literature on business models and pivoting (e.g., Zott and Amit 2007, Teece 2010, Ries 2011, Osterwalder and Pigneur 2013, Foss and Saebi 2016), we created a comprehensive set of eight categories or types of possible *strategic shifts* that we label new offering, narrow offering, broad offering, advanced offering, target segment, go-to-market, revenue model, and mass market (refer to Appendix B for descriptions).[30] Next, we designed a new measurement tool consistent with our conceptual framework, which outlines the two necessary conditions (analysis and adjustment) that must be met for a business change to qualify as a marketing strategy innovation. Additionally, for robustness, we measure these shifts in three (increasingly strict) ways: Confirmed Shift, Audited Shift, and Strategic Shift. In addition to analyzing and adjusting business model components, marketing strategy innovation also involves creating greater value for customers. Thus, to examine the link between strategic shifts and value creation, we construct a composite with eight outcome variables that proxy for customer value (i.e., willingness to pay, satisfaction, loyalty, word of mouth, margins, needs, differentiation, and usability). This continuous Customer Value composite was used in our subsequent analysis. Online Appendix 21 outlines all questions and measurement details.

6.2. Impact of Virtual Coaching on Marketing Strategy Innovation

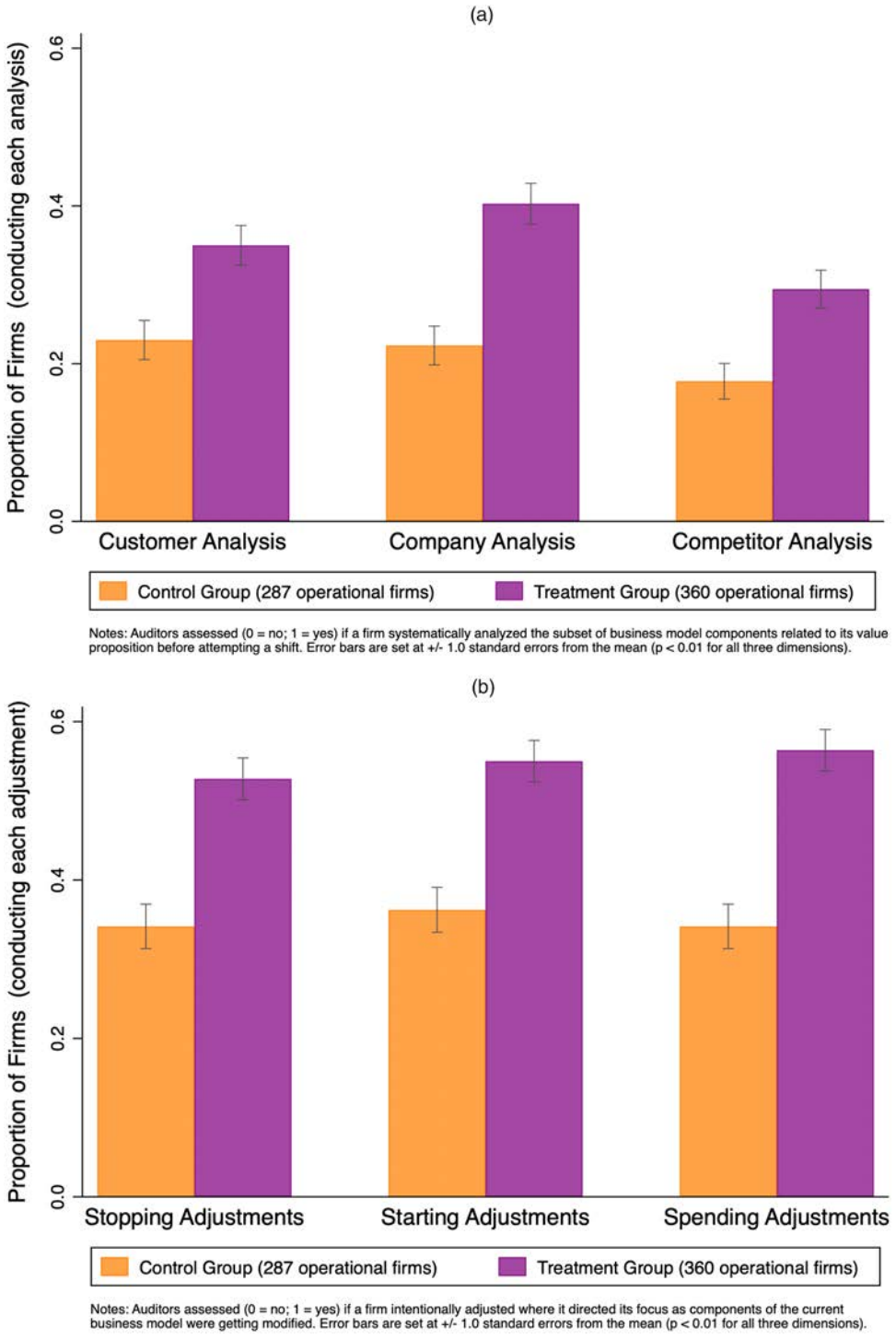
To study the causal impact of virtual business coaching on marketing strategy innovation, we examine the intervention's effects on both strategic shifting and customer value.

6.2.1. Strategic Shifting. We begin with model-free evidence. First, Figure 1(b) summarizes the shifts carried out across the two experimental groups. A total of 321 firms shifted their business model components from baseline to midline, and they did so by conducting a variety of shift types. The majority of firms shifted by broadening their offering ($n = 198$), followed by narrowing their offering ($n = 79$). A number of firms also innovated their marketing strategy by developing a new

offering to address a different customer need ($n = 24$) or by using a new technology to provide a more advanced offering ($n = 25$). Importantly, there is a significant effect of virtual coaching on marketing strategy innovation, with shifts carried out by 58.6% of treatment firms and only 38.3% of control firms (see Online Appendix 22, left panel).

Second, Figure 2 examines the extent to which these shifts were *strategic* based on the process of analyzing and adjusting business model components related to

Figure 2. (Color online) Marketing Strategy Innovation—Analysis and Adjustment



Notes. (a) Analysis (of business model components). (b) Adjustments (as business model components were modified).

the firm's value proposition. Figure 2(a) breaks down the Analysis condition into its three dimensions. Compared with control firms, a greater proportion of treatment firms systematically analyzed their customers, the company, and competition. The overall rating on the Analysis condition of shifting is also significantly higher for firms that shifted in the treatment group (mean = 6.42) versus the control group (mean = 4.98).[31] Next, Figure 2(b) shows results for the three dimensions of the Adjustment condition. More treatment firms (than control firms) intentionally adjusted business model components based on differences in their stopping, starting, and spending focus. In turn, the Adjustment condition's overall rating is significantly higher for treatment firms (mean = 8.19) versus control firms (mean = 7.89). Finally, following from these results on the Analysis and Adjustment conditions, we find that the Strategic Shifts composite significantly differs between the two experimental groups (treatment mean = 7.31; control mean = 6.43). The impact of virtual coaching on marketing strategy innovation, therefore, holds even when the strictest measure of shifting is used; 44.7% of treatment firms conducted a Strategic Shift, whereas just 25.4% of control firms did so (see Online Appendix 22, right panel).

Critically, this model-free evidence is further supported by the regression analysis reported in Table 2. A more conservative approach is taken by using the Strategic Shifts binary measure as the dependent variable in all regressions (coded one if the firm shifted its marketing strategy and zero if not). Columns (1)–(4) display results for models estimated using a probit regression, whereas columns (5)–(8) do so using an OLS regression. There is a positive and significant treatment effect of virtual coaching on marketing strategy innovation. As displayed in columns (1) and (2), firms in the treatment group are 52.8%–56.8% more likely to conduct a strategic shift (during the previous 18 months) compared with firms in the control group. Additionally, the ATT effects in columns (3) and (4) show an even larger impact for entrepreneurs who completed at least two modules of coaching; these complier firms have a 66.3%–71.6%

Table 2. Impact of Virtual Coaching on Marketing Strategy Innovation—Strategic Shifting (Mechanism)

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	Strategic Shifts				Strategic Shifts			
	[Probit]				[OLS]			
	ITT	ITT	ATT	ATT	ITT	ITT	ATT	ATT
Treatment: Offered coaching (yes = 1)	0.528***	0.568***			0.193***	0.188***		
	(0.104)	(0.109)			(0.037)	(0.038)		
Treatment complier: Completed at least 2 modules (yes = 1)			0.663***	0.716***			0.246***	0.241***
			(0.127)	(0.133)			(0.047)	(0.049)
Baseline value of dependent variable included	—	—	—	—	—	—	—	—
Entrepreneur controls included (×10)	—	Yes	—	Yes	—	Yes	—	Yes
Business controls included (×15)	—	Yes	—	Yes	—	Yes	—	Yes
Industry fixed effects included (×10)	—	Yes	—	Yes	—	Yes	—	Yes
R^2	0.031	0.085			0.040	0.099	0.021	0.080
Sample size: Total	647	635	647	635	647	640	647	640
Sample size: Treatment or complier group	360	353	360	353	360	356	360	356
Control: Mean of dependent variable	0.254	0.255	0.254	0.255	0.254	0.254	0.254	0.254
Control: Standard deviation of dependent variable	0.436	0.437	0.436	0.437	0.436	0.436	0.436	0.436
Treatment effect: p-value	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Effect size: Percent	52.816	56.832	66.313	71.643	75.826	74.055	96.799	95.054
Effect size: Standard deviation	1.211	1.301	1.520	1.640	0.442	0.431	0.564	0.553

Notes. This table summarizes analysis for the mechanism effect of coaching on shifts (from baseline to midline). The dependent variable in all models is the Strategic Shifts binary measure obtained by computing the average score across auditor ratings (0 = not convinced; 10 = very convinced) for the two conditions of marketing strategy innovation (analysis; adjustment), which was converted to a binary outcome coded one if the shift was strategic (score of six or higher on the composite). Columns (1)–(4) present models estimated using probit regression. Columns (5)–(8) present models estimated using OLS regression (linear probability model). In each set of analyses, the left two columns present the ITT effects, and the right two columns present the ATT effects where coaching compliance (minimum of two modules completed) is instrumented with coaching offer (randomly assigned). Regressions do not include the baseline value of the dependent variable (by design, a shift can only be measured after it happened or at midline). The indicated models include 10 controls for entrepreneur characteristics at baseline (gender, age, ethnicity, marital status, children, education level, business program, prior salaried job, previous ownership experience, commitment), 15 controls for business characteristics at baseline (founder, operating years, start-up capital, formal loans, separation of business-personal affairs, days open per week, sales frequency, physical premises, registration, business practices, total products size, B2B customers, markets outside city, total paid employees, total assets), and 10 industry fixed effects (a full set of one-digit SIC codes: 01–09, 10–19, 20–29, 30–39, 40–49, 50–51, 52–59, 60–69, 70–79, 80–89). All regressions exclude firms that failed as at the midline (nonoperational with zero monthly sales); however, qualitatively similar results are obtained if such firms are included in the sample. Robust standard errors are in parentheses.

***Statistically significant p-value at the 1% significance level.

greater likelihood of strategically shifting business model components related to their value proposition. Next, results in columns (5)–(8) demonstrate that the treatment effects hold if the binary dependent variable is estimated using an OLS regression (i.e., linear probability model).[32] Taken together, the results on strategic shifting provide support for Hypothesis 2(a).

6.2.2. Customer Value. In addition to analyzing and adjusting business model components, our conceptualization of marketing strategy innovation also requires that the shift creates value for customers. Thus, we examine the value creation effects of virtual coaching and strategic shifting in Table 3. Columns (1)–(4) display regressions using the continuous Customer Value composite as the dependent variable (0 = lowest to 8 = highest value created). As shown in columns (1) and (2), treatment firms create 59.4% more customer value (than control firms), achieving a 0.89 higher score on the Customer Value composite. Further, columns (3) and (4) demonstrate that the impact of virtual coaching on customer value creation is stronger for compliers (ATT effect of 75.9%). Next, columns (5)–(8) present a two-stage least squares analysis to examine the association between marketing strategy innovation and firm sales. In columns (5) and (6), the Strategic Shifts binary measure (coded one if the firm shifted its marketing strategy and zero if not) is instrumented with the virtual coaching offer (i.e., the randomly assigned treatment). As per column (5), there is a positive relationship between conducting a strategic shift (measured at midline) and firm sales (measured at endline)—a 119.8% increase or gain of roughly 5,635,308 UGX ($1,541 USD) in monthly sales. Additionally, in columns (7) and (8), a binary measure of Customer Value (coded one if the firm scored above the median and zero if below) is instrumented with the virtual coaching offer. The significant results suggest that creating greater customer value is linked with higher firm sales. For instance, column (7) shows that a high score on the Customer Value composite is associated with an increase in monthly sales of 116.0% or 5,452,887 UGX ($1,491 USD). Overall, these findings on customer value creation lend support to Hypothesis 2(b).

6.3. Strategic Focus and Heterogeneous Treatment Effects

Next, the analysis delves into mechanisms further by studying which kinds of entrepreneurs benefit most from virtual coaching. We analyze heterogenous treatment effects to test if our intervention—which aims to simulate strategic business changes—works better for entrepreneurs who lack strategic focus.

6.3.1. Measurement of Strategic Focus. At baseline, we measured each entrepreneur's (ex ante) level of strategic focus in decision making. Seven characteristics were included: inconsistent preferences, impulsiveness, myopic views, temptation unawareness, lack of self-control tools, unpreparedness, and impatience. Based on responses to these questions, we constructed a Low Strategic Focus continuous variable and a Lower Strategic Focus binary variable for use in our analysis. Online Appendix 25 provides further details.

6.3.2. Heterogeneous Treatment Effects. We start by reviewing model-free evidence for the impact of virtual coaching on firm sales by entrepreneur type (see Online Appendix 26). When entrepreneurs are more strategic, the intervention does not lead to sales differences. By contrast, when entrepreneurs are less strategic, receiving virtual coaching results in significantly higher monthly sales for treatment firms compared with control firms. This pattern is further supported by the regression results. Table 4 summarizes analysis for heterogeneous effects of coaching based on an entrepreneur's level of strategic focus. Across columns (1)–(8), there is a positive and significant sales effect for entrepreneurs with lower strategic focus. The interaction analysis in columns (1)–(4) uses the continuous Low Strategic Focus composite. Results are significant for all ITT and ATT specifications. The main model of interest, in column (1), shows that treatment group firms gain 6,215,018 UGX ($1,700 USD) in monthly sales (a 133.3% increase) when led by entrepreneurs lowest in strategic focus. Alternatively, the models in columns (5)–(8) use the binary Lower Strategic Focus variable. The interaction term is positive and significant in all four specifications. As per column (5), when entrepreneurs lack strategic focus, the treatment offer leads to a 2,577,839 UGX ($705 USD) increase in their monthly sales (a 55.3% effect size). These results support Hypothesis 2(c).

6.4. Complementarity of Strategic Shifts and Tactical Practices

As argued in Section 2, we predict the theoretical mechanism to operate through strategic shifts (e.g., 3Cs of marketing) and not via increases in tactical practices (e.g., 4Ps of marketing). Also, given our objective of isolating changes in marketing strategies, we recruited more established firms already using several business tactics (7.7 verified practices pre intervention). So, a priori, we do not expect treatment firms to start using more tactics than control firms during the study period. Nonetheless, we examine the impact of virtual coaching on tactical business practices to better understand the mechanism of change (see Online Appendix 27). A total of 27 business tactics or practices were measured at midline—with 9 practices verified by an auditor in each of three functional areas: Operations (managing physical resources, people, and processes), Marketing (market research, marketing tactics, and sales tactics), and Finance

Table 3. Impact of Virtual Coaching on Marketing Strategy Innovation—Customer Value (Mechanism)

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	Customer Value				Firm Sales			
	ITT	ITT	ATT	ATT	2SLS	2SLS	2SLS	2SLS
Treatment: Offered coaching (yes = 1)	0.886*** (0.197)	0.841*** (0.204)						
Treatment complier: Completed at least 2 modules (yes = 1)			1.132*** (0.252)	1.080*** (0.254)				
Strategic shift: Binary measure (yes = 1)					5,635.308* (3,228.097)	6,275.334** (3,005.771)		
Customer value: Binary measure (higher = 1)							5,452.887* (3,112.083)	6,027.766** (2,891.047)
Baseline value of dependent variable included	—	—	—	—	Yes	Yes	Yes	Yes
Entrepreneur controls included (×10)	—	Yes	—	Yes	—	Yes	—	Yes
Business controls included (×15)	—	Yes	—	Yes	—	Yes	—	Yes
Industry fixed effects included (×10)	—	Yes	—	Yes	—	Yes	—	Yes
R^2	0.030	0.093	0.023	0.089	0.208	0.272	0.210	0.266
Sample size: Total	647	640	647	640	547	542	547	542
Sample size: Treatment or complier group	360	356	360	356	303	300	303	300
Control: Mean of dependent variable	1.491	1.500	1.491	1.500	4,702.520	4,508.946	4,702.520	4,508.946
Control: Standard deviation of dependent variable	2.380	2.389	2.380	2.389	8,408.581	7,791.448	8,408.581	7,791.448
Treatment effect: *p*-value	0.000	0.000	0.000	0.000	0.081	0.037	0.080	0.037
Effect size: Percent	59.444	56.075	75.887	71.976	119.836	139.175	115.957	133.685
Effect size: Standard deviation	0.373	0.352	0.476	0.452	0.670	0.805	0.648	0.774

Notes. This table summarizes analysis for the value creation effect of coaching and marketing strategy innovation. Columns (1)–(4) present the treatment effect of coaching on the Customer Value composite; a total of eight customer value outcomes (willingness to pay, satisfaction, loyalty, word of mouth, margins, needs, differentiation, usability) were rated by auditors at the business location, with each outcome scored zero if it was not and one if it was successfully achieved (rating of 6 or higher on a 0–10 scale). This dependent variable represents a continuous measure of customer value ranging from zero (lowest) to eight (highest). Columns (1) and (2) present the ITT effects. Columns (3) and (4) present the ATT effects, where coaching compliance (minimum of two modules completed) is instrumented with coaching offer (randomly assigned). Columns (5)–(8) present the relationship between marketing strategy innovation and the Standard Composite measure for monthly sales (average of the aided-recall and anchored-adjusted estimates after winsorizing each 1% on both tails). This dependent variable represents a continuous measure of monthly sales (listed as UGX in 1,000 s). Columns (5) and (6) present the two-stage least squares (2SLS) analysis where Strategic Shift (binary measure coded one if the analysis and adjustment conditions of a marketing strategy innovation were met) is instrumented with coaching offer (randomly assigned). Columns (7) and (8) present the 2SLS analysis where the Customer Value composite (binary measure coded one if above the median) is instrumented with coaching offer (randomly assigned). All models are estimated using OLS regression. The indicated models include the baseline value of the dependent variable as well as 10 controls for entrepreneur characteristics at baseline (gender, age, ethnicity, marital status, children, education level, business program, prior salaried job, previous ownership experience, commitment), 15 controls for business characteristics at baseline (founder, operating years, start-up capital, formal loans, separation of business-personal affairs, days open per week, sales frequency, physical premises, registration, business practices, total products size, B2B customers, markets outside city, total paid employees, total assets), and 10 industry fixed effects (a full set of one-digit SIC codes: 01–09, 10–19, 20–29, 30–39, 40–49, 50–51, 52–59, 60–69, 70–79, 80–89). All regressions exclude firms that failed as at the the survey round (nonoperational with zero monthly sales); however, qualitatively similar results are obtained if such firms are included in the sample. Robust standard errors are in parentheses.

*Statistically significant *p*-value at the 10% significance level; **statistically significant *p*-value at the 5% significance level; ***statistically significant *p*-value at the 1% significance level.

(tracking, analyzing, and planning finances).[33] Columns (1) and (2) present regression results for the Total Practices composite obtained by adding up the score for every tactical business practice (continuous measure between 0 and 27). First, in line with our sample recruitment approach, the average number of practices implemented per firm was fairly high (control mean = 7.16). Second, there are no significant differences in the Total Practices between groups. In fact, treatment firms tend to have been using fewer business practices than control firms overall—although these differences are not substantively large (effect sizes of −5.3% to −6.8%). See also columns

Table 4. Strategic Focus and Heterogeneous Treatment Effects (Mechanism)

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	Firm Sales				Firm Sales			
	[Strategic Focus = continuous interaction variable]				[Strategic Focus = binary interaction variable]			
	ITT	ITT	ATT	ATT	ITT	ITT	ATT	ATT
Treatment: Offered coaching (yes = 1)	1,318.743** (579.713)	1,453.713** (577.413)			1,294.983** (579.936)	1,441.499** (578.910)		
Treatment complier: Completed at least 2 modules (yes = 1)			1,686.569** (757.585)	1,890.898** (738.204)			1,583.439** (761.253)	1,794.690** (739.414)
Low strategic focus: Continuous (normalized 0–1; mean centered)	−2,314.459 (1,954.966)	−2,833.301 (1,817.844)	−2,310.673 (1,945.753)	−2,776.723 (1,739.489)				
Lower strategic focus: Binary (yes = 1; mean centered)					−1,284.623 (915.236)	−1,332.631 (829.322)	−1,279.674 (909.051)	−1,293.458 (791.510)
Interaction: (Strategic focus continuous) × (Treatment)	6,215.018** (2,730.501)	6,932.199*** (2,543.121)						
Interaction: (Strategic focus continuous) × (Treatment complier)			7,954.165** (3,615.890)	8,693.645*** (3,235.144)				
Interaction: (Strategic focus binary) × (Treatment)					2,577.839** (1,222.732)	2,895.583** (1,148.175)		
Interaction: (Strategic focus binary) × (Treatment complier)							3,267.126** (1,659.176)	3,617.454** (1,494.729)
Baseline value of dependent variable included	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Entrepreneur controls included (×10)	—	Yes	—	Yes	—	Yes	—	Yes
Business controls included (×15)	—	Yes	—	Yes	—	Yes	—	Yes
Industry fixed effects included (×10)	—	Yes	—	Yes	—	Yes	—	Yes
R^2	0.296	0.370	0.287	0.360	0.296	0.370	0.289	0.364
Sample size: Total	607	602	607	602	607	602	607	602
Sample size: Treatment or complier group	337	334	337	334	337	334	337	334
Control: Mean of dependent variable	4,662.500	4,487.407	4,662.500	4,487.407	4,662.500	4,487.407	4,662.500	4,487.407
Control: Standard deviation of dependent variable	8,209.284	7,637.581	8,209.284	7,637.581	8,209.284	7,637.581	8,209.284	7,637.581
Interaction effect: *p*-value	0.023	0.007	0.028	0.007	0.035	0.012	0.049	0.016
Effect size: Percent	133.298	154.481	170.599	193.734	55.289	64.527	70.072	80.613
Effect size: Standard deviation	0.757	0.908	0.969	1.138	0.314	0.379	0.398	0.474

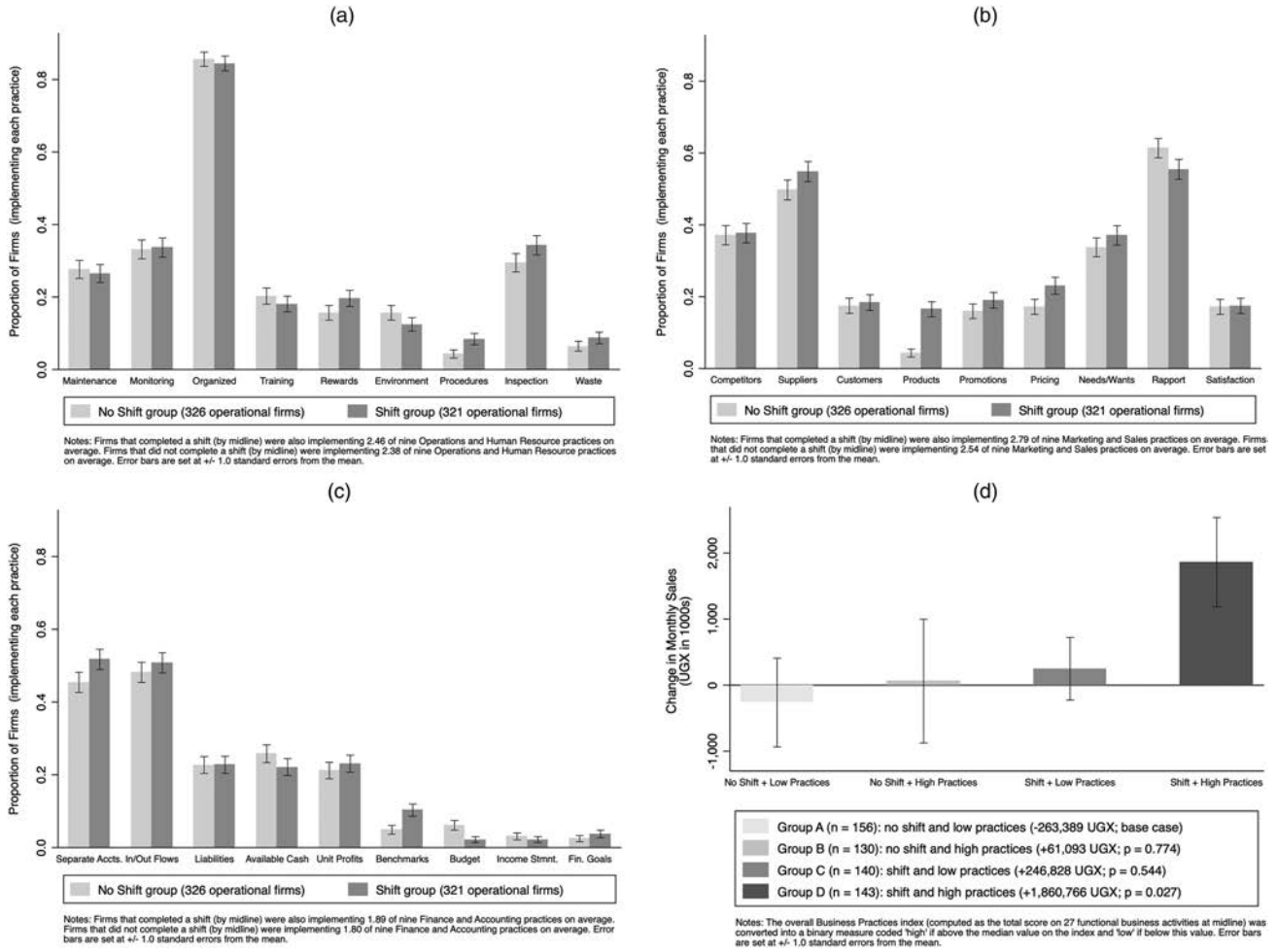
Notes. This table summarizes analysis for heterogeneous effects of coaching on sales (from baseline to endline) based on an entrepreneur's level of Strategic Focus. The dependent variable in all regressions is the Standard Composite measure for sales (average of the aided-recall and anchored-adjusted estimates after winsorizing each 1% on both tails). Columns (1)–(8) present analysis for entrepreneurs with lower *strategic focus* measured pre intervention using seven individual characteristics (inconsistent preferences, impulsive, myopic, temptation unawareness, lack self-control tools, unprepared, impatient), with each characteristic scored one if above the median value on this measure (lower strategic focus) and zero if below the median (higher strategic focus). The sum of these seven characteristics was computed to construct an overall *strategic focus* composite ranging from zero (highest) to seven (lowest). The interaction analysis in columns (1)–(4) uses a continuous measure of this composite: normalized between zero (highest strategic focus) and one (lowest strategic focus) and then mean centered. The interaction analysis in columns (5)–(8) uses a binary measure of this composite: coded as zero (higher strategic focus) or one (lower strategic focus) and then mean centered. In each set of analyses, the left two columns present the ITT effects, and the right two columns present the ATT effects, where coaching compliance (minimum of two modules completed) is instrumented with coaching offer (randomly assigned). All models are estimated using OLS regression. The indicated models include the baseline value of the dependent variable as well as 10 controls for entrepreneur characteristics at baseline (gender, age, ethnicity, marital status, children, education level, business program, prior salaried job, previous ownership experience, commitment), 15 controls for business characteristics at baseline (founder, operating years, start-up capital, formal loans, separation of business-personal affairs, days open per week, sales frequency, physical premises, registration, business practices, total products size, B2B customers, markets outside city, total paid employees, total assets), and 10 industry fixed effects (a full set of one-digit SIC codes: 01–09, 10–19, 20–29, 30–39, 40–49, 50–51, 52–59, 60–69, 70–79, 80–89). All regressions exclude firms that failed as at the endline (nonoperational with zero monthly sales); however, qualitatively similar results are obtained if such firms are included in the sample. All monthly sales values (if in levels) are listed as UGX in 1,000 s. Robust standard errors are in parentheses.

**Statistically significant *p*-value at the 5% significance level; ***statistically significant *p*-value at the 1% significance level.

(3)–(8). These findings suggest our intervention did not lead to a greater number of practices being implemented by treatment group firms (although the nature of a specific practice could have changed). Thus, the underlying theoretical mechanism—linking virtual coaching to firm sales—does not appear to be explained by a differential increase in tactical business practices (e.g., 4Ps of marketing).

Next, we explore the relationship between tactical practices and strategic shifts. As noted previously, any shift in marketing strategy must eventually be implemented using the tactical levers a firm can pull, including some marketing mix activities. Figure 3 summarizes a descriptive analysis of the tactical business practices implemented by firms that conducted a marketing strategy innovation (i.e., the Shift group) and those that did not (i.e., the No Shift group). First, across the 27 tactical practices measured at midline, there is no discernible pattern (nor significant one) whereby firms that conducted a shift in marketing strategy also systematically implemented a different number of practices in total (mean = 7.14) than firms that did not shift (mean = 6.72). Second, within each functional area, the total number of tactical practices does significantly differ between firms in either group. On average, firms in the Shift group were implementing 2.46 operations and human resource practices (Figure 3(a)), 2.79 marketing and sales practices (Figure 3(b)), and 1.89 finance and accounting practices (Figure 3(c)), although firms in the No Shift group were, on average, implementing a similar number of tactical practices across each of the three functional areas. Third, Figure 3(d) suggests that shifting marketing strategies and implementing tactical practices are not mutually exclusive. Compared against the base case (i.e., firms not shifting strategies and implementing a low number of practices), there was no significant change in monthly sales for firms that either (a) did not shift but had high practices or (b) shifted strategies but had low practices. The analysis finds a significant and positive association with firm performance (of +1,860,766 UGX in monthly

Figure 3. Complementarity of Strategic Shifts and Tactical Practices (Mechanism)



Notes. (a) Operations and human resource practices. (b) Marketing and sales practices. (c) Finance and accounting practices. (d) Complementarity of shifts and practices.

sales) only for firms that shifted their marketing strategy while also maintaining a high number of business practices.[34] Thus, there seems to be a complementary relationship between strategic shifts and tactical practices.

6.5. Discussion

The overall pattern of results reported in our mechanism analysis provides support for Hypotheses 2(a), 2(b), and 2(c). The virtual coaching intervention was successful in stimulating more marketing strategy innovation by treatment firms (from baseline to midline) with respect to both analyzing and adjusting how business model components are designed. Moreover, making these strategic shifts creates value. Our analysis finds that treatment firms not only shifted more (than control firms) but also shifted marketing strategies in ways that created greater value for customers—in terms of increasing willingness to pay, enhancing satisfaction, boosting loyalty, generating positive word of mouth, raising margins, meeting needs, differentiating from competitors, and improving usability. In addition, virtual business coaching is particularly effective in raising the sales of entrepreneurs who have a deficit in their strategic approach to decision making. This is consistent with our mechanism of marketing strategy innovation (i.e., strategic shifting). Through Skype videoconferencing and mobile calls with an international coach, the local Ugandan entrepreneur analyzes her customers, the company, and competition. These interactions, alongside marketplace assignments, ultimately nudge the entrepreneur to adjust business model components related to her value proposition. Thus, it is reasonable to expect that such an intervention—with so much time and attention focused on strategic marketing changes—would be more beneficial to entrepreneurs who a priori tend to be less strategic in their decision making. Lastly, although virtual coaching does not increase the total business tactics used in a firm, there is still a complementary role to be played by tactical practices. We find that sales gains are greatest for firms that shift their marketing strategy while also implementing a high number of business tactics.

7. Conclusion

We conduct a randomized controlled field experiment with 930 Ugandan entrepreneurs to identify the impact of international business coaching (via virtual collaboration technology). The analysis finds that treatment firms increase monthly sales by 1.29 million Ugandan shillings ($352 USD), which represents a 27.6% improvement over the two-year study period. In terms of the mechanism, entrepreneurs who receive virtual business coaching are 52.8% more likely (than control firms) to have completed a marketing strategy innovation (e.g., the 3Cs of marketing) but did not, as expected, implement more business tactics (e.g., the 4Ps of marketing). We next discuss benefits and costs, followed by implications for practice and research.

7.1. Benefits and Costs

Our main dependent variable of interest is firm sales. However, we examine additional firm performance outcomes in Online Appendix 28 for the purpose of comparing benefits and costs. Columns (1) and (2) display results on a composite measure of Monthly Profits. Compared with control firms, treatment firms increase their monthly profits in the range of 394,728 UGX (ITT effects) to 521,349 UGX (ATT effects)—although both coefficients have large standard errors and are only significant at the 10% level. As a different type of empirical support, columns (3) and (4) present a Change in Profits-Sales Scale that assesses (at endline) the extent to which the entrepreneur is convinced her business profits and sales have changed during the past two years using a one (decreased a lot) to five (increased a lot) scale. Here again, there is a positive and significant effect for the impact of virtual coaching on firm performance. Next, as a more rigorous test of changes in firm performance, columns (5) and (6) rely on a Profits-Sales Index measure. This outcome was computed by first standardizing each of the individual monthly estimates (two for profits; two for sales) and then taking the average of these four values. For entrepreneurs in the treatment group, there is a sizeable 0.17- to 0.22-standard deviation increase in monthly profits and sales (versus those in the control group). Lastly, as per columns (7) and (8), our virtual coaching intervention is also shown to have a large effect when an Overall Performance Index is used (calculated by averaging the five standardized measures).[35]

Taken together, this additional evidence bolsters support for the positive benefits of virtual business coaching. The average firm in our treatment group achieves 1,287,327 UGX ($352 USD) more in sales and 394,728 UGX ($108 USD) more in profits each month. From the firm's viewpoint, this monthly profit gain can be highly beneficial. For instance, considering the 145 firms with a bank loan at baseline, this lift in profits could nearly cover their monthly debt payment (which averages about 486,472 UGX per month). Indeed, a performance increase of this magnitude would be sufficient to pay the monthly cost of many operating expenses for the typical Ugandan small firm, such as rent (341,136 UGX), electricity (61,828 UGX), transport (177,527 UGX), or equipment rentals and repairs (134,415 UGX). Additionally, from a policy maker's viewpoint, this virtual coaching intervention can also provide a reasonable return on investment in terms of costs versus benefits. On the one hand, our partner budgets $600–$800 USD for each coaching project (with the unit cost reduced when scaled to 100 or more projects running concurrently in the same region). On the other hand, an average treatment firm in our study increases its monthly sales by ~$350 USD and monthly profits by

~$100 USD. This means it might take the typical entrepreneur six to eight months to start realizing a positive return on a coaching investment (if paying out of pocket)—and even less time if subsidized by stakeholders interested in spurring small firm growth.

7.2. Implications for Practice

The paper's analysis of the impact of virtual coaching on the performance of emerging market firms offers valuable insights for the practice of marketing. First, our findings encourage marketers at multinationals to leverage virtual collaboration technologies to improve expansion efforts into foreign markets. Maintaining the status quo in a post-COVID-19 world is ill advised. Instead, marketing managers should embrace new communication tools that let them effectively (and flexibly) access local talent; develop on-the-ground knowledge; and enhance their capabilities in customer research, product development, and distribution (Chironga et al. 2018).

Second, our study results suggest that entrepreneurs can benefit from remote coaching arrangements that allow them to interact with management professionals across markets. Whether running a start-up in Silicon Valley or a small firm in sub-Saharan Africa, entrepreneurs should seek out opportunities to connect with advisors who bring different viewpoints and experiences into business strategizing. The resultant strategic changes may be more defensible and harder to imitate than tactical changes competitors can easily copy.

Third, the intervention's success offers a promising new business support model for stakeholders motivated to help small firms grow, such as governments, nongovernmental organizations (NGOs), and investment funds. Virtual business coaching (e.g., via Skype videoconferencing, mobile calls, emails, and messaging apps) represents a scalable and feasible approach that policy makers can use to supplement their more traditional support services. It also provides a reasonable return on investment given that a typical entrepreneur could cover the cost of a coaching project within one year using her sales and profit gains. In fact, policy makers may wish to subsidize the intervention's cost given its potential benefit of reducing *class ceiling* barriers; cheaper and broader access to high-quality managerial capital can remove obstacles that otherwise limit upward mobility for business people from lower socioeconomic backgrounds (Friedman and Laurison 2019).

7.3. Limitations and Future Research

Although our study provides useful insights for practice, this research is not without its limitations. One caveat with interpreting our results is that we do not have data beyond 24 months, and thus, we cannot comment on the long-run persistence of the sales effects. Relatedly, our cost-benefit analysis only considers the partner's cost to implement a coaching project. We were unable to account for any direct costs incurred by firms (e.g., in conducting analyses or making adjustments to shift strategies) nor for any costs of labor or managerial capital (e.g., expertise and opportunity costs of coaches who volunteer their time).[36] So, our return-on-investment calculations may understate the time required to realize a net benefit. Future research that measures impacts at five years post intervention as well as more detailed intervention costs is welcomed.

A second limitation is that the design of our field experiment precludes analysis of general equilibrium effects. Although this was not our intention a priori—and empirically, we have shown that the main effect of increased sales does not appear to be driven by market stealing—a policy maker should still be aware that offering this intervention to *all* small firms in the same country might not result in the desired consequence of equally benefiting every participant. We expect that there will be winners and losers to such a scaling effort. Future work can, therefore, build on the competition and stealing analysis done in this paper to better understand economy-wide outcomes in equilibrium, as well as whether more selective targeting of firms into business support programs leads to greater overall returns for the allocation of scarce government funds.

A third shortcoming to acknowledge is the generalizability of our findings. We implemented this study in a single emerging market with a carefully screened sample of growth-oriented entrepreneurs running more established small firms. The magnitude of our main effects may not carry over to other contexts. Thus, researchers can add knowledge by launching new firm growth experiments in a different country (e.g., a more advanced market) and with a novel unit of analysis (e.g., entrepreneurs leading technology- and innovation-driven start-ups).

Fourth, our treatment group was capped at 530 firms and limited to a single intervention given the practical constraints of our partner. This prevented us from recruiting more coaches and adding a second treatment arm (for exposure to a supplementary intervention). Doing so in future studies offers the opportunity of examining an even richer set of research questions.

A fifth limitation is that we only measure our mechanism at one point in time (at the midline), and so, we could miss some strategic changes that happened earlier (just after baseline) or later (between midline and endline). Thus, despite rigorously verifying the occurrence of marketing strategy innovation by firms, our measures may not fully capture the causal chain if firms were experimenting with multiple strategies over time. For instance, our intervention may not have directly driven a change in strategy, but rather, virtual coaching could have first prompted learning (e.g., of promising strategic alternatives) or search (e.g., for additional resources, help, etc.), which indirectly stimulated the strategic shift we measured at midline (Gans et al. 2019). Such measurement

challenges call attention to the need for more empirical work on strategic-level marketing decisions; opportunities exist beyond the business model Analysis and Adjustment topics covered here, not to mention research on strategic shifting and its role in enhancing firm performance. Indeed, as a *call to arms* for researchers, McKenzie (2020) emphasizes that "there remain many important open questions that need addressing … the number of studies of business education is still tiny compared to the vast literature on general education. I therefore hope we will continue to see more studies on this topic" (McKenzie 2020, p. 32). We trust that this study has helped move both the academic research and business practice among entrepreneurial firms in emerging markets in that direction.

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Appendix A. Comparison of Relevant Studies

Table A.1. Comparison of Relevant Studies

Study	Overview	Key differences (vs. our study)
Bruhn et al. (2018)	The Bruhn et al. (2018) study focuses on in-person consulting services with larger firms and tactical-level changes in business practices. By contrast, our study focuses on virtual business coaching with smaller firms as an intervention and strategic-level changes in business model components as a mechanism. The research context also differs.	(i) *Intervention*. Regarding intervention differences, the Bruhn et al. (2018) study uses a more expensive, traditional face-to-face consulting intervention (similar to Bloom et al. 2013) that involves paid, local service providers working inside larger-sized firms. In contrast, our study leverages a new virtual approach for facilitating business collaboration that relies on management professionals from outside the country who volunteer to remotely coach local entrepreneurs. Importantly, virtual collaboration technology is not only becoming a prevalent business tool in the post-COVID-19 world, but it also allows for more feasible and scalable interventions that can increase access to managerial capital for entrepreneurs. (ii) *Mechanism*. With respect to mechanism differences, Bruhn et al. (2018) focus on business tactics or practices (across a general set of functional areas) as the channel for explaining firm performance improvements. Unlike our study, their causal evidence does not identify effects on strategic business changes, nor does it emphasize marketing as an underlying process (be it strategic adjustments or tactical activities). That said, Bruhn et al. (2018) do conjecture that strategic-level improvements could be beneficial for firms. Exploring eight case studies (from a sample of 432 firms), the researchers discovered that six of them covered Mission and Vision statements during the consulting service. Further, following interviews with two consultancies, the Bruhn et al. (2018) paper suggests that some treatment firms also developed a business plan at the beginning of their consulting engagement. This anecdotal evidence on the potential value of business strategy is encouraging. Critically, however, the Bruhn et al. (2018) study does not systematically compare differences in strategies between treatment and control firms, nor does it empirically measure any changes in strategy over time (by firms in either experimental group). It is also silent on strategic changes specific to the marketing function. (iii) *Generalizability*. A third important difference is generalizability to smaller-sized firms, other sectors, and low-income countries. Bruhn et al. (2018) run their study with much larger and mainly manufacturing firms in Mexico, as do Bloom et al. (2013) in India. Although still classified as emerging markets, Mexico and India are relatively more advanced than most countries in sub-Saharan Africa, Latin America, and Southeast Asia—in terms of access to financial and managerial capital as well as to customers and market demand. Our study, by contrast, includes entrepreneurs running small firms across a range of industry sectors in Uganda. Moreover, traditional consulting services have not been found to be especially effective for

Table A.1. (Continued)

Study	Overview	Key differences (vs. our study)
		improving the performance of small firms (e.g., Karlan et al. 2015). Thus, alternative business support approaches (like virtual coaching) should be designed and tested for small-scale entrepreneurs motivated to grow in developing economies.
Anderson et al. (2021b)	The Anderson et al. (2021b) study examines how volunteer marketers help Ugandan entrepreneurs to grow their businesses. It leverages the same field recruitment and data collection process as our study, but there are critical differences in the research questions, experimental design, outcome measures, data sets, and analysis of heterogeneous treatment effects. In sum, the two papers make distinct contributions to the literatures in marketing and development economics.	(i) *Research Questions*. Our research questions focus on understanding whether and how international business coaching (via virtual collaboration technology) impacts firm performance. As such, our experiment was designed specifically to address these main effect and mechanism questions. Anderson et al. (2021b) make use of an experiment within our experiment (i.e., randomized matching of entrepreneurs and volunteers) to examine a distinct set of questions on the role of marketers vs. professionals from other functional backgrounds in growing small firms. (ii) *Outcome Measures*. Given that the research questions and interventions differ, it follows that alternative outcome measures are used in the two papers. Anderson et al. (2021b) study how marketers help entrepreneurs become more differentiated and enhance overall firm growth (using an index of assets, employees, sales, profits), whereas our study examines the impact of virtual business coaching on marketing strategy and its direct link to sales. (iii) *Data Sets*. Our study's data collection instruments included custom-designed modules to measure (a) strategic marketing shifts (using audits of eight different shift types and verification of a firm's analysis and adjustment activities) and (b) monthly sales (using multiple estimates and automated triangulation methods). By contrast, the unique aspects of Anderson et al. (2021b) are based on different data sets, including text analysis of administrative data from the partner's project management system, as well as variables manually coded using data scraped from the curriculum vitas (CVs) and LinkedIn profiles of volunteer professionals. (iv) *Heterogeneity*. Our study's analysis of heterogeneous treatment effects is novel given its use of multiple psychological variables to measure *strategic focus* at the individual entrepreneur level. The interaction analysis in Anderson et al. (2021b) instead uses business-level moderators and examines nonlinear relationships.

Appendix B. Conceptual Framework of Marketing Strategy Innovation

Table B.1. Conceptual Framework of Marketing Strategy Innovation

	Definition	
Marketing strategy innovation	We define marketing strategy innovation (strategic shifting) as the process of analyzing and adjusting how some business model components are designed to create value for customers.	
Conditions	Definition	Dimensions
Analysis	There must be a systematic *analysis* of the subset of business model components related to the firm's value proposition (i.e., the 3Cs of marketing).	(i) *Customers*. Entrepreneur analyzed who is in the target market (e.g., needs or problems to be addressed, preferences, market sizing, segmenting. (ii) *Company*. Entrepreneur analyzed what is being offered (e.g., benefits or solutions to be provided, product economics, firm economics and resources, targeting). (iii) *Competition*. Entrepreneur analyzed why it will be chosen over alternatives (e.g., advantages or attractiveness vs. others, performance, defensibility, positioning).
Adjustment	There must be an intentional *adjustment* in where the firm directs its focus as components of the current business model get modified.	(i) *Stopping*. Entrepreneur quit focusing on previous components in a purposeful attempt to change the value proposition (e.g., stopped addressing an old customer need). (ii) *Starting*. Entrepreneur began focusing on new components in ways that lead to a different value proposition (e.g., started addressing a different customer need). (iii) *Spending*. Entrepreneur allocated time, money, or people resources to achieving a redesigned value proposition (e.g., spent money on addressing the new customer need).

Table B.1. (Continued)

Shift types	Description (as per midline)	Case studies A (examples in spirit from our study)	Case studies B (examples in spirit from our study)
1. *New Offering* (same customers but new offering to solve a different pain point or address an unresolved need)	In the past 18 months, have you completely changed the focus of your business offering after learning about the real needs of your customers? Has a new product/service become the main source of sales for your business because it solves an important customer problem? We mean have you shifted your business focus by offering a different product/service that you previously never sold to customers? For instance, after a deliberate study of your customers, you discovered they had needs or problems that could not be addressed by your old products/services (from 18 months ago). So, you decided to stop selling these products/services and shifted your focus to a new product/service that you could sell to the same customers? Or maybe you decided to make major adjustments to your old products/services, and now your offerings address the important customer need or problem that you learned about through market research?	There is an entrepreneur with a shop that sells DVDs and prints photos. However, after analyzing the market and gathering feedback with the guidance of his coach, the entrepreneur realizes that what his customers really need is someone to repair their electronic equipment, and that he has that capacity. He also learns that people are capturing many more short videos (as smartphone usage increases in Africa), but they have no way to edit, compile, and store them. So, the entrepreneur shifts the strategic direction of his firm. He stops purchasing DVDs and photo printing paper, and instead, he dedicates resources to offering these new services that better solve a growing problem in the market; in other words, he shifts to solve an unaddressed customer pain point with a new offering. His coach helped him rethink how to create value for customers and deliver it in order to increase his sales.	The entrepreneur of a small clothing shop works with her coach to track and analyze her business finances. She soon discovers that her business is not profitable, and so, together with her coach, she develops a short market research survey to find out what her existing customers and others in the surrounding area really need. Affordable shoes and bags appear to be in high demand, so the entrepreneur shifts to focus on a new offering; she stops purchasing clothes and starts stocking shoes and bags to sell retail and wholesale. This strategic shift results in increased sales from existing and new customers, allowing her to hire a shop assistant to serve customers while she travels to China to purchase new stock.
2. *Narrow Offering* (reducing the number of products, services, or features offered)	In the past 18 months, have you narrowed the focus of your business offering? Has one (or just a few) of your products/services become the main source of sales for your business? We mean have you shifted your business focus by now offering only a subset of the products/services that you previously sold to customers? So, of all the different products/services that you used to offer (18 months ago), have you decided to concentrate on selling just one or a few of these products/services in order to grow the business? Or maybe you decided to focus on a single feature of your product/service, and now only this smaller part is the main offering that you sell to customers?	The entrepreneur is an auto mechanic doing repairs for anyone who comes into the business. Whatever they want, he does it. He has no focus. He offers a broad mix of services; some are profitable, others are not. Then, he gets a coach who starts pushing him to analyze what services are the most popular and most profitable, both with his current customers and with other potential customers who drive vehicles in the area. He realizes that the things people want the most are just tire rotations and oil changes done as quickly as possible. So, he narrows the focus of his business and sells only the subset of offerings that tend to be in the highest demand. Using his existing skills and resources, he is also able to train and hire apprentices who can complete these services in a cost-efficient manner. Customers are happy because they get reliable, fast, affordable auto services, and	An entrepreneur operating a unisex hair salon discovers that many customers are complaining they are not comfortable sharing a salon with the opposite sex. So, the entrepreneur asks her coach to help her decide which services to focus on. The coach shows the entrepreneur how to record and analyze the sales, costs, and profit margins of her various services and encourages her to think about her business' strengths and opportunities in the market. Based on these analyses, she decides to drop men's barbering services. Instead, she spends time learning about new ladies' hairstyles and trains her employee in doing the most popular set of women's styles. She invests in some new marketing materials and gives the salon a fresh look with new paint so as to become more noticeable. As a result of this strategic shift, her female customers are comfortable and

Table B.1. (Continued)

Shift types	Description (as per midline)	Case studies A (examples in spirit from our study)	Case studies B (examples in spirit from our study)
		the entrepreneur is happy because his firm increases sales.	more satisfied with the stylish services offered. They pay higher prices and repeat purchases, which leads to increased sales.
3. *Broad Offering* (expanding the number of products, services, or features offered)	In the past 18 months, have you broadened the focus of your business offerings? Have more than one (or many) of your products/services become the sources of sales for your business? We mean have you shifted your business focus from previously selling just one particular product/service to now offering multiple products/services? So, of the few products/services that you used to offer (18 months ago), have you decided to add more products/services in order to grow the business? Or maybe you decided to expand from a product/service with a single feature, and now your offering to customers includes multiple features?	There is a tailor who started off just making traditional African dresses. Then, throughout the coaching intervention, she discovers that her customers' husbands also want similar styles of clothes made out of the same materials. Because she already has the skills, equipment, and materials, she calculates that this will be a cost-effective service to add. So, the entrepreneur conducts a strategic shift and broadens her product portfolio by making traditional African clothing for men as well. She researches popular styles for men and invests in some flyers and a sign advertising this new service. In this way, she not only meets the demand of her existing customers wanting matching outfits for their husbands but also begins to attract new customers, namely men needing formal African attire.	The entrepreneur is a tattoo artist running a successful tattoo parlor. Increasingly, his customers are asking whether he does piercings as well. At first, he is hesitant to add this service as he works alone and is already very busy with the tattoo service. His coach helps him draw up a budget and do a forecast of the costs and possible revenues from hiring and training someone to do piercings. Analyzing the numbers, the entrepreneur realizes that adding piercing services to his firm's repertoire is a no brainer. So, he buys the equipment, hires an employee, and dedicates a part of the shop floor to the piercing service. By broadening his offering, the entrepreneur increases sales from his existing customers wanting piercings and also attracts new customers wanting tattoos or piercings (or both).
4. *Advanced Offering* (use of a new technology to provide a more effective, efficient, or superior offering)	In the past 18 months, have you adopted a new technology into your business that lets you meet the same customer need but in a more effective way? Did you continue providing the same products/services (which solve the same customer problem) but do so using a completely different technology? We mean have you shifted your technological focus in a way that appeals to your existing customers (e.g., superior performance or price) and makes the business operation more efficient (e.g., reduced manufacturing or delivery costs)? For example, a photocopying business could start using a digital copier instead of an old manual one, which provides customers with higher-quality copies and a faster printing speed. Or, a juice smoothie seller could start making its drinks with an electric blender (instead of a sieve to manually strain juice), which makes a better-tasting drink faster that also contains less pulp.	There is a small-scale manufacturer who makes peanut butter, a cheap source of protein, fat, and minerals and a staple in Ugandans' diets. She gets assigned a coach who gets her to write down and analyze all her sales, cost of goods, and profit margins. She realizes through this exercise that her suppliers charge a lot more for ground nuts than whole nuts and that she could save a lot of money by investing in a grinding machine to grind her own nuts. She decides to apply for a bank loan to supplement her savings and uses the money to buy a grinding machine. With her new machine, her input costs are lower (as she now only buys whole nuts), and her productivity has increased enough to meet the growing customer demand in the market, resulting in higher sales.	There is a photographer who set up a business taking photos and videos for clients (e.g., weddings, events, and projects). Business is going well, but she knows that, to reach the next level (and higher-paying customers), she needs better equipment. Her coach helps her to analyze her business cash flow and compile a savings plan for buying new higher-quality camera lenses—as well as a drone for doing aerial photography, which she learned about during a recent trip to Nairobi. The investment pays off; feedback from customers is very positive. Additionally, despite now charging higher prices, she is attracting larger B2B clients, partly through word-of-mouth recommendations. Her overall business sales go up steadily.

Table B.1. (Continued)

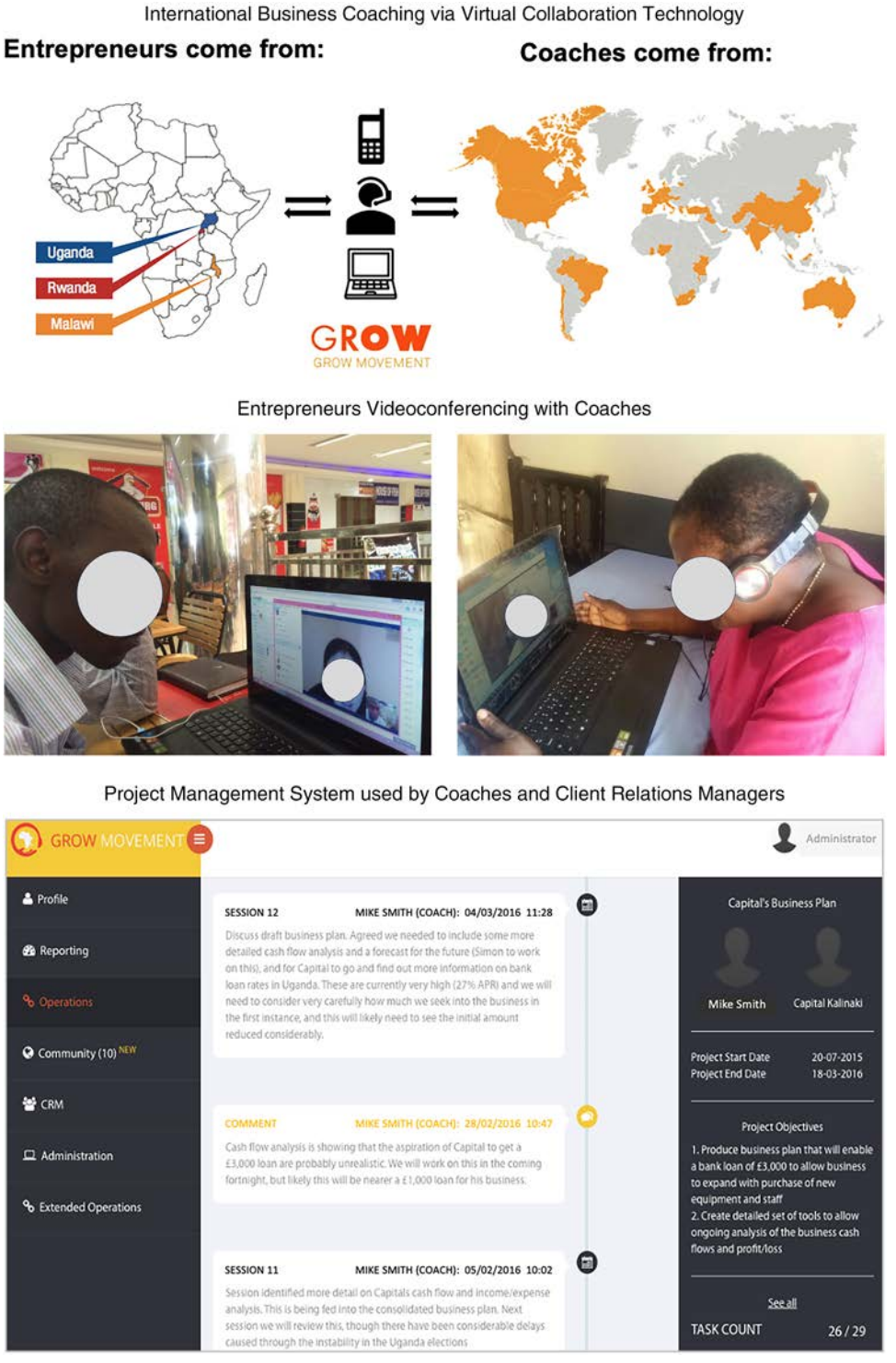
Shift types	Description (as per midline)	Case studies A (examples in spirit from our study)	Case studies B (examples in spirit from our study)
5. *Target Segment* (same offering but switch sales and marketing efforts toward a new group of customers)	In the past 18 months, have you shifted the focus of your business to a different group of customers? Have you started focusing on a new type of customer for your business other than the people you originally targeted? We mean have you started selling the same products/services to a completely new segment of customers (i.e., different types of people, industries, or geographies compared with those you targeted 18 months ago)? This might be a group of customers who have a need or problem that is better addressed by your products/services than the type of customers you originally planned to serve. So, this new customer group would likely get more satisfaction from your products/services (compared with the people you previously thought should be your target customers).	The entrepreneur has a business doing customized art, graphic design, and printing for customers. The business is located near the university, so the entrepreneur had been targeting students. However, after completing a product-market analysis with his coach, the entrepreneur realizes that the seasonality of business from students posed a risk, and instead, he has an opportunity to increase sales by targeting the university (and other academic institutions). So, with his coach's help, the entrepreneur develops a new flyer and marketing pitch and then visits course administrators at the universities to market his firm's services. Although his shop is still open to students and the general public, focusing his time and limited marketing resources on this new customer segment resulted in greater sales.	There is an entrepreneur struggling to stay ahead of the competition in her restaurant business. She thinks she could increase sales by providing catering services to other businesses (e.g., events companies, schools, offices). So, the entrepreneur asks her coach to help her do the relevant number crunching and break-even analysis. The idea seems feasible, so she shifts to offer her services to this new customer segment. Additionally, to save money, she keeps the kitchen for her catering business but rents out the restaurant floor to a small retailer. At first, she focuses on business clients located near her, but eventually, she saves enough to put down a deposit for a loan. She uses the loan to buy a vehicle to transport food to new customers in more distant markets and increases her sales even further.
6. *Go-To-Market* (change the channel, intermediary, or method for getting your offering to customers)	In the past 18 months, have you changed the way in which your products/services are ordered or delivered to customers? Did you decide that your same product/service could reach the same customers but through a different channel with greater effectiveness? We mean have you shifted from a direct sales channel (e.g., customers buy directly from you or your company stores) to an indirect sales channel (e.g., customers buy your products/services through someone else's retail store, a distributor, an independent sales agent, or a third-party seller)? For instance, after carefully examining how your goods get to the end user, you decide to start selling directly to these consumers (by opening your own stores, selling online, etc.) instead of distributing your products/services through a variety of small retail shops.	There is an entrepreneur who runs a drink shop that sells specialty coffees and juices. He typically sits inside the shop waiting for people to come and buy from him. He is complacent. Along comes a coach who highlights that this is not a good strategy for growing sales and encourages the entrepreneur to explore other ways of getting his products into the market. After comparing the costs and benefits of different options, the entrepreneur eventually hires a few guys on bodas (motorcycle taxis) to go out and deliver the drinks door to door, which can now be ordered via phone, text message, or email. Because footfall to his shop is low, he decides to move the business to a cheaper location and use the savings to hire someone to manage customer orders. The entrepreneur expanded his sales through a different channel.	There is an entrepreneur who has developed a new groundnut and fish paste, which is both tasty and healthy. She used to sell through small grocery stores but feels she can increase her revenues by selling directly to consumers. With the help of her coach, she draws up a sales forecast and budget for renting a stand at a popular market in town. Based on the numbers, they decide to trial the plan. The entrepreneur stops delivering to half of her former distributors and puts down a deposit for a stand at the marketplace. She also buys a little gas stove, so that she can cook some of the paste for customers to taste test on the spot. After a month, the entrepreneur finds she sold many more units directly at the marketplace and also got a higher margin for her products. As a result, she stops market delivery via her distributors and then rents a stall at a second market, which a newly hired worker runs for her.
7. *Revenue Model* (different sources of collecting	In the past 18 months, have you changed the focus of your revenue model or sales	An entrepreneur running a small independent gym charges clients on a per-session basis.	There is an internet café entrepreneur who charges $2 per hour for customers to use a

Table B.1. (Continued)

Shift types	Description (as per midline)	Case studies A (examples in spirit from our study)	Case studies B (examples in spirit from our study)
money from customers or a new approach to charge money for your offering)	streams? Has a new approach become the main way that you collect revenues or get money from your customers? We mean have you shifted how you bring money into your business or take money from your customer's wallet/purse? In this case, your products/services remain the same, but you change "what you charge for" or "how your customers make payments?" For instance, instead of charging a single price for your product/service (18 months ago), you started offering the "basic version" of your product/service for a low price, but after a customer has signed up, then you offered them the "full version" for a higher price. Or, maybe you added a "mobile money" payment method, so customers no longer have to pay with "cash?"	However, the business struggles with clients using the facility on credit and never paying the fee. With a coach's help, the entrepreneur assesses his customers' gym use habits and works out a new revenue model based on membership fees. To introduce this change to his customers, he launches a promotion offering the first month free. He designs and prints flyers and buys equipment to make and laminate membership cards. Although he sees a drop in irregular customers who used to pay per session, he finds over time that he gets more regular (paying) customers and fewer customers reneging on payments. In turn, monthly recurring revenues increase.	computer and the internet. However, more and more of his customers prefer to connect to the internet on their own smartphones and complain about having to pay the same as those who also use the computers. With the help of a coach, the entrepreneur estimates the impact on revenues of switching to a revenue model where customers pay $3 per hour to use its computers (and the internet) or $1 per hour for internet access only if they use their own devices. The entrepreneur decides to shift and finds that his existing customers are happy because they feel listened to. Many of them end up using his café more frequently and for longer stretches at a time, and they recommend his café to their friends, resulting in more sales.
8. *Mass Market* (reconfigure structures to create a more standardized offering that appeals to mass market)	In the past 18 months, have you shifted the focus of your structures or processes to create a more standardized product/service that appeals to many people? We mean has your business switched from focusing on high-margin, low-volume products/services (more customized) to focusing on low-margin, high-volume offerings (less customized)? For instance, 18 months ago you were offering more customized products/services to business clients that required a lot of time to build and install. Then, you shifted your business processes and now sell more standardized products/services to the mass market that require less time to manufacture and deliver. Or, maybe you made the reverse shift in business focus: from a high-volume standardized good to a low-volume customized offering.	There is an artisan making and selling jewelry. The designs are simple, and the materials inexpensive; so, she is able to make and sell a lot of pieces at low cost. However, in discussion with her coach, the entrepreneur increases her confidence that, with proper planning and marketing, she can realize her dream of making high-quality, elaborate pieces of jewelry for her customers—who have recognized her talent and increasingly started asking for more complex, customized designs. She gradually spends more of her time and money on making jewelry that she promotes as wearable art and eventually discontinues her simple range when her reputation is established and sales from her new, higher-margin jewelry pieces start to grow.	A shoemaker who makes unique shoes that are custom built to meet the style and specifications of each customer starts interacting with his coach. Together, they assess the product economics and realize that although each pair of shoes fetches a high price, the business is struggling to attract enough customers to make a profit. So, his coach suggests a shift toward mass market offerings; instead of making a few (customized) shoes at a high margin, she advises the entrepreneur to try making more (widely appealing) shoes at a lower margin. The entrepreneur agrees and starts spending his time making many units of his three most popular designs. He buys some shelves to better display his new stock and offers customers a buy-one-get-one-half-price deal to increase sales.

Appendix C. Intervention Overview

Figure C.1. (Color online) Intervention Overview



Appendix D. Timeline, Sample, and Sequence of Effects

Figure D.1. Timeline and Sample

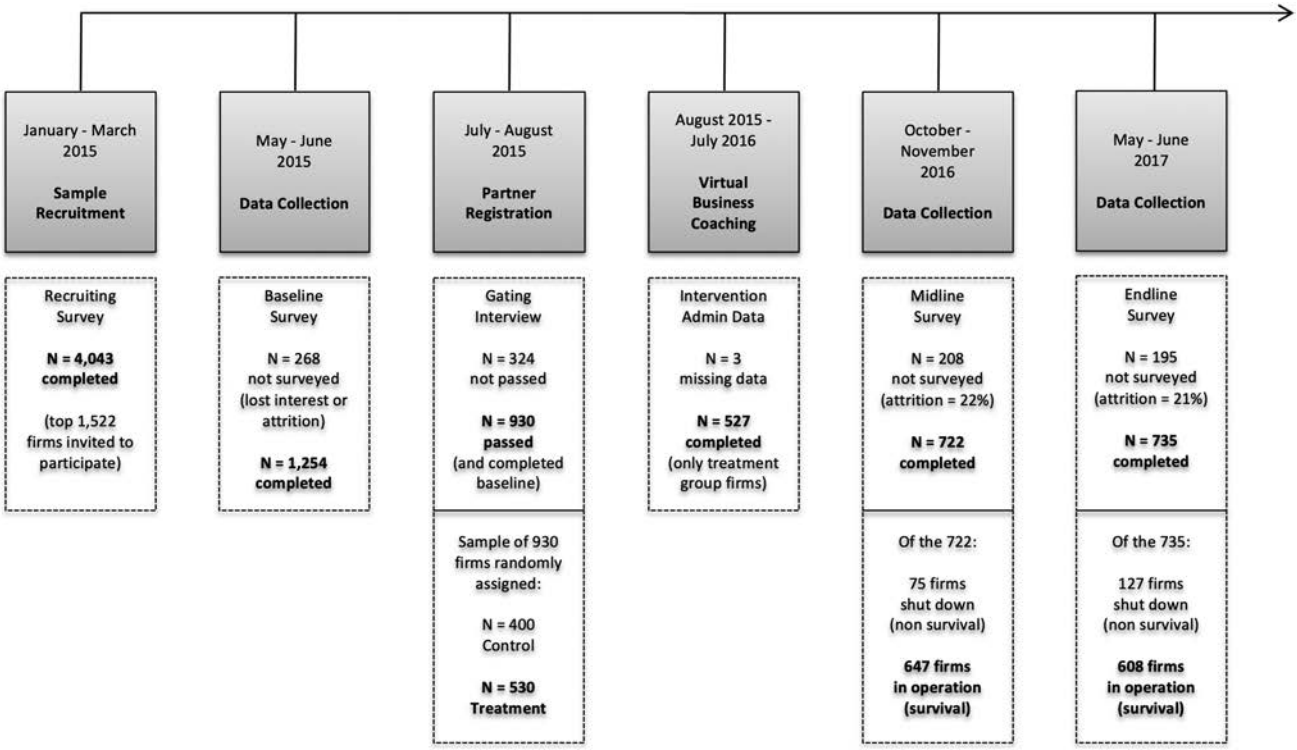
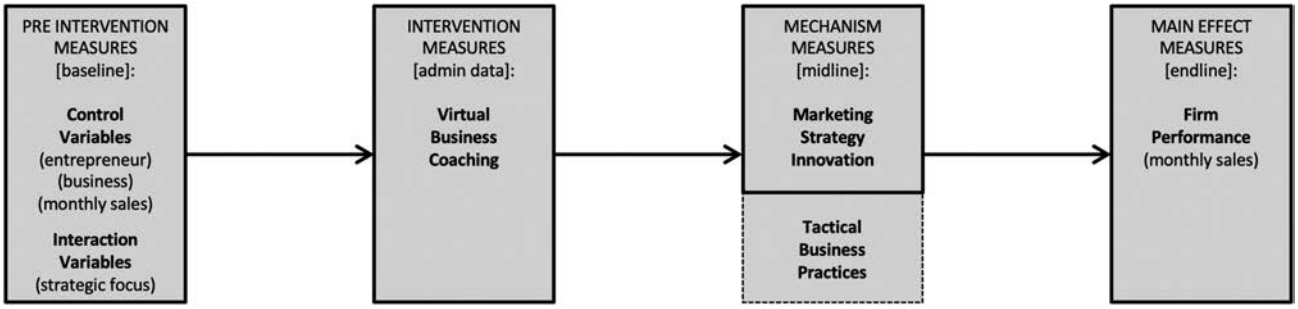


Figure D.2. Sequence of Effects



Appendix E. Randomization and Summary Statistics—Baseline Sample

Table E.1. Randomization and Summary Statistics—Baseline Sample

	(1)		(2)		(3)		(4)
	Full sample		Control group		Treatment group		Difference in means test
Variable Name	N = 930		N = 400		N = 530		Value = (2) − (3)
Founder of current business (yes = 1)	0.695	(0.015)	0.675	(0.023)	0.709	(0.020)	−0.034
Years operating current business (continuous)	3.944	(0.148)	3.779	(0.216)	4.068	(0.202)	−0.289
Start-up capital: Above median (yes = 1)	0.668	(0.015)	0.672	(0.023)	0.664	(0.021)	0.008
Prior loan with a formal institution (yes = 1)	0.125	(0.011)	0.133	(0.017)	0.119	(0.014)	0.014
Separates business and personal affairs (yes = 1)	0.742	(0.014)	0.748	(0.022)	0.738	(0.019)	0.010
Days open per week (1–7)	6.511	(0.023)	6.530	(0.033)	6.496	(0.032)	0.034
Sales frequency: Daily to monthly (0–4)	1.326	(0.025)	1.320	(0.039)	1.330	(0.033)	−0.010
Structure of business premises (0–14)	9.901	(0.101)	9.970	(0.154)	9.849	(0.133)	0.121
Business registered with government (yes = 1)	0.222	(0.014)	0.223	(0.021)	0.221	(0.018)	0.002
Business practices: Number implemented (0–27)	7.675	(0.133)	7.600	(0.202)	7.732	(0.176)	−0.132
Operations practices: Number implemented (0– 9)	2.533	(0.055)	2.527	(0.083)	2.538	(0.073)	−0.010
Marketing practices: Number implemented (0–9)	3.280	(0.065)	3.208	(0.097)	3.334	(0.088)	−0.126
Finance practices: Number implemented (0–9)	1.862	(0.056)	1.865	(0.086)	1.860	(0.075)	0.005
Products (size): Different levels or types of options (0–11)	2.737	(0.098)	2.603	(0.144)	2.838	(0.134)	−0.235
Customers: Sells business to business (percent)	11.080	(0.708)	11.620	(1.066)	10.672	(0.946)	0.948
Markets: Sells in a different city (percent)	2.165	(0.157)	2.189	(0.294)	2.146	(0.162)	0.043
Employees: Number of paid workers (continuous)	1.732	(0.110)	1.907	(0.212)	1.600	(0.107)	0.307
Employees: Number of paid and unpaid workers (continuous)	2.451	(0.119)	2.643	(0.223)	2.306	(0.125)	0.337
Assets: Current value of all assets (UGX in 1,000s)	15,903.395	(1,396.803)	17,546.769	(2,781.601)	14,663.112	(1,265.327)	2,883.657
Assets: Current value of all working capital (UGX in 1,000s)	9,628.393	(930.962)	10,272.170	(1,612.056)	9,142.524	(1,091.046)	1,129.646
Sales (aided recall): Total last month (UGX in 1,000s)	5,001.451	(701.254)	5,037.400	(853.831)	4,974.321	(1,048.985)	63.079
Sales (anchored adjusted): Total last month (UGX in 1,000s)	5,389.328	(537.195)	5,338.041	(771.828)	5,428.035	(741.719)	−89.994
Female (yes = 1)	0.397	(0.016)	0.403	(0.025)	0.392	(0.021)	0.010
Age (continuous)	30.932	(0.261)	30.738	(0.386)	31.077	(0.353)	−0.340
Age: Below 26 years (yes = 1)	0.191	(0.013)	0.170	(0.019)	0.208	(0.018)	−0.038
Age: 26–30 years (yes = 1)	0.348	(0.016)	0.380	(0.024)	0.325	(0.020)	0.055*
Age: 31–35 years (yes = 1)	0.210	(0.013)	0.212	(0.020)	0.208	(0.018)	0.005
Age: Above 35 years (yes = 1)	0.251	(0.014)	0.237	(0.021)	0.260	(0.019)	−0.023
Ethnicity: Local Ugandan (yes = 1)	0.985	(0.004)	0.983	(0.007)	0.987	(0.005)	−0.004
Married (yes = 1)	0.536	(0.016)	0.536	(0.025)	0.535	(0.022)	0.001
Children (continuous)	2.262	(0.071)	2.272	(0.100)	2.255	(0.098)	0.018

Table E.1. (Continued)

Variable Name	(1) Full sample N = 930		(2) Control group N = 400		(3) Treatment group N = 530		(4) Difference in means test Value = (2) − (3)
Highest education level (0–10)	6.639	(0.052)	6.616	(0.081)	6.656	(0.068)	−0.040
Prior business program (yes = 1)	0.545	(0.016)	0.560	(0.025)	0.534	(0.022)	0.026
Prior salaried job: Company size (0–7)	3.504	(0.084)	3.485	(0.128)	3.519	(0.111)	−0.034
Previously owned a business (yes = 1)	0.460	(0.016)	0.482	(0.025)	0.443	(0.022)	0.039
Committed and capable to participate (0–4)	3.703	(0.013)	3.687	(0.019)	3.714	(0.017)	−0.028
F test (of joint significance): F statistic							0.688
F test (of joint significance): Sample size							899

Notes. This table presents baseline summary statistics for firms and entrepreneurs. All firm financial values (if in levels) are listed as UGX in 1,000 s. Column (1) presents average values for the full sample. Columns (2) and (3) present average values by experimental group. Standard errors are in parentheses to the right. Column (4) presents equality of means tests (t tests) between groups. The value displayed for a t test is the difference in the means between experimental groups (with an asterisk denoting significant differences). The value displayed for the F test is the F statistic. There are 31 firms with a missing value on at least one variable included in the F test.

*Statistically significant p-value at the 10% significance level.

Endnotes

[1] In marketing strategy formulation, such an approach is often referred to as the "3Cs" framework of analyzing customers, the company, and competition and then, changing the firm's strategic focus.

[2] See https://daily.jstor.org/how-wrigley-chewed-its-way-to-gum-greatness/.

[3] See https://www.businessinsider.com/how-twitter-was-founded-2011-4.

[4] See https://www.cnbc.com/2019/01/07/starbucks-cafes-coffee-business.html.

[5] See https://www.cnet.com/tech/mobile/nokia-is-150-from-paper-and-rubber-to-some-of-the-best-phones-ever/.

[6] See https://www.bbc.com/news/business-38667475.

[7] See https://www.beautylish.com/a/vxquv/the-history-of-avon.

[8] In the marketing literature, such tactics are often referred to as the "4Ps" in reference to product, price, place, and promotions.

[9] See https://www.worldbank.org/en/topic/smefinance.

[10] This equates to implementing 28.5% of all 27 verifiable practices measured across the operations, human resource, marketing, sales, finance, and accounting functions of each firm. It also represents a substantial level of (ex ante) managerial capital considering that most business training programs are successful in increasing the use of just 1 in every 20 practices (McKenzie 2020, p. 10).

[11] For interpreting effects, we use the currency conversion rate on October 31, 2017 (as per www.xe.com), which represents the midpoint of our endline surveying period: 1.00 USD = 3,656 UGX.

[12] Strategies and tactics were measured at the same time (during the midline survey round). Additionally, as expected, there were no significant effects of virtual coaching on increases in tactical business practices. Section 6.4 provides further details.

[13] The term *micro* is often used to describe less formal enterprises with zero or only a handful of workers (most of whom are unpaid family members). Additionally, the term *subsistence* typically refers to owners who run a business without a physical structure (e.g., on the roadside, in a makeshift market, etc.) and do so just to survive or secure food (i.e., their primary objective is not business growth).

[14] Given there has not yet been an empirical paper on marketing strategy innovation, we have not only created a novel conceptual framework (see Appendix B) but also built a new operational measurement approach for examining strategic marketing shifts (refer to Section 6.1 for details).

[15] For the reasons noted, we did not a priori expect our virtual coaching intervention to significantly increase the number of practices or marketing tactics (e.g., 4Ps) implemented by firms in our treatment group (relative to those in the control group). As argued, we expect the theoretical mechanism to operate through changes in marketing strategy (e.g., 3Cs). We also acknowledge that, in the end, any strategic shift must eventually be implemented using the tactical levers a firm can pull—which would invariably include elements of the marketing mix, such as product, pricing, placement, and promotional activities. Thus, although both firms receiving and not receiving our treatment must resort to changing at least some elements of the marketing mix to bring about positive changes in performance, we only expect the underlying motivation for making such changes (strategic versus tactical) to differ between the two groups. We do not expect any difference between experimental groups regarding a change in the *total number* of tactical practices implemented. However, by rigorously measuring both, the observed implementation of tactical practices (e.g., marketing mix) cannot only get distinguished from but also linked to observed changes in strategic shifts (e.g., marketing strategies).

[16] Coaches were randomly assigned (by the research team), so there was no self-selection in the matching of coaches and firms.

[17] CRMs were not aware of the experiment or research hypotheses, and thus, they were unlikely to have influenced the study.

[18] These group sizes were chosen based on the authors' a priori power calculations as shown in Online Appendix 7 (~250 firms per group minimum at endline postattrition) and the partner's need to include 1,000 firms (~600 beneficiaries to be treated and ~400

control firms). The partner marketed this project under the #Grow600 tagline but was only able to secure 530 coaches by the launch deadline (hence, only 530 firms could be treated). Random assignment happened after the partner confirmed this total. Notably, this resulted in a reasonably powered study design for at least three reasons. (1) Our sample size is fairly large when considering other studies on small firm growth in these contexts (McKenzie and Woodruff 2013). (2) As described in Sections 3.1 and 3.2, our intervention is sufficiently strong in terms of its design, compliance rates, and implementation (McKenzie 2020). (3) We obtain less noisy estimates of our dependent variable by measuring sales four ways through an electronic triangulation and iteration technique, as well as winsorizing values to reduce the influence of outliers (Anderson et al. 2021a).

[19] Data collection was conducted by Innovations for Poverty Action (IPA) but done so using an electronic survey tool designed by one of the authors. We used the SurveyCTO system to implement our field surveys and store all data. In addition to training and managing the field team, IPA research managers were also responsible for ensuring that high-quality data were obtained.

[20] As noted previously, our recruitment process was the same as in the study by Anderson et al. (2021b). Despite many key differences between that paper and ours (e.g., research questions, experimental design, measurement, analyses, results), we include similar descriptions of any pertinent research steps to be comprehensive and transparent.

[21] As designed, firms in the Higher Screening Score group ($n = 1{,}522$) differed from firms in the Lower Screening Score group ($n = 2{,}521$) on screening, business, and entrepreneur characteristics (refer to Online Appendix 9).

[22] As designed, firms in the Study Sample ($n = 930$) differed from firms in the Lower Screening Score group ($n = 2{,}521$) on screening, business, and entrepreneur characteristics (refer to Online Appendix 10).

[23] The identical set of randomization checks was performed with the full sample at endline (see Online Appendix 12). Here again, the F test is not significant, and there is only one statistically significant difference across the 36 t tests.

[24] ATT effects using alternative definitions of compliance (e.g., minimum of one or five modules completed), as well as different matching approaches, are also estimated for robustness (refer to Section 5.3). For fundraising or recruiting efforts, the ATT results may be of interest to our NGO partner as well as its donors and coaches if they want to measure the impact for those entrepreneurs who fully comply (i.e., a potential upper bound of a completed coaching project). The ATT effect could also be useful to marketers and multinational managers looking to work with local entrepreneurs for distributing their goods or understanding their overseas customers. In this case, the marketer may interview multiple entrepreneurs until she can find the right one who will comply with her virtual coaching and ultimately make the desired strategic changes that increase sales. That said, an important caution with ATT results is that assignment to treatment may in itself influence firm performance through channels outside the coaching intervention, thereby violating the exclusion restriction. We, therefore, focus on the ITT results.

[25] Thus, our analysis sample did not include attritors (blank values on all financial responses) and nonsurvivors (zero values on all financial responses). This follows the standard, more conservative approach for dealing with nonsurvivors in small firm studies (Anderson et al. 2018). Nonetheless, we rerun each analysis with nonsurvivors included and obtain qualitatively similar results.

[26] As a robustness check, we rerun all our analyses with the subset of firms that do keep financial records (e.g., administrative accounting statements) and obtain qualitatively similar results to our main analysis (refer to Section 5.3).

[27] For firms that maintained financial records, these adjustment steps included referring to their accounting books or spreadsheets to ensure that the correct monthly values were entered into the Summary Statement and stored in the electronic tool. Thus, the final estimate of firm sales last month (anchored-adjusted value) accurately reflects the official administrative records for this subset of firms.

[28] IHS transformation: $IHSy_i = \log[(y_i) + ((y_i)^2 + 1)^{1/2}]$.

[29] This lack of evidence on *stealing sales* is consistent with the model-free analysis, which did not find substantial or significant changes in the average monthly sales of control group firms from baseline to endline (refer to Online Appendix 18).

[30] We view each type of strategic shift as a possible consequence of an entrepreneur's strategic thinking and choices. In general, strategic shifting is expected to culminate from (a) an entrepreneur thinking about her business while systematically analyzing the subset of business model components related to the firm's value proposition (i.e., customers or who is buying; the company offering or what are they buying; and competition or why are they buying over alternatives) and (b) an entrepreneur making choices as part of intentionally adjusting the firm's focus while modifying business model components (i.e., stopping the firm's focus on previous components; starting to focus on new components in ways that lead to a different value proposition; and spending time, money, or people resources to ultimately redesign the firm's value proposition). Thus, this deliberate process of analyzing and adjusting business model components to achieve an overall change in marketing strategy can be viewed as distinct from the individual business tactics or practices a firm implements as part of its day-to-day business operations.

[31] Refer to Online Appendix 23(a) for evidence on the significant differences between treatment and control firms with respect to (i) systematic analysis, (ii) intentional adjustment, and (iii) overall strategic shifts. For the treatment group, the average auditor rating on each condition was above a 6 (of 10), and in all cases, the treatment group rating was higher than the control group—including on the composite score. These descriptive differences are reinforced by the regression analysis (Online Appendix 23(b)), where the virtual coaching intervention is shown to have a positive and significant effect on each condition of strategic shifting.

[32] Additional robustness checks were also performed. (1) Qualitatively similar results are obtained if the Audited Shifts measure is used as the dependent variable—instead of the stricter Strategic Shifts measure (Online Appendix 24(a)). (2) The positive treatment effects also hold if the continuous measure (0–10 scale) of either dependent variable is used in the analysis (Online Appendix 24(b)).

[33] For robustness, we checked that the constructs were orthogonal. First, we ran a principal components analysis incorporating the six strategic shift dimensions and the nine tactical practice composites. The 15 measures loaded cleanly onto two distinct constructs (eigen values of 4.31 and 2.43); the first included only the six strategic shift measures (customers, company, competition; starting, stopping, spending), and the second included only the nine tactical practice measures (three for operations, three for marketing, three for finance). Second, we checked the pairwise correlation between each strategic shift measure and all nine tactical practice measures. No pairwise correlation was greater than 0.20 (customers: $r < 0.151$; company: $r < 0.182$; competitors: $r < 0.164$; stopping: $r < 0.109$; starting: $r < 0.160$; spending: $r < 0.144$). In addition, our *strategic shifts* mechanism analysis yielded consistent results even when baseline values of the tactical practice composites were included in any regression that specified controls.

[34] This model-free evidence is reinforced by regression analysis that finds a similar pattern of results. Also, Figure 3 uses the audited shifts measure for display purposes; however, the same complementarity exists with the strategic shifts measure (+1,734,051 UGX).

[35] We also compare the cost structure of treatment and control firms in Online Appendix 29. Across the 13 categories, we do not find any patterns of systematic difference in costs between groups when compared in levels (UGX per month), percentages (each cost calculated as a percentage of sales), or deltas (change from baseline to endline in a cost's percentage of sales). This suggests that the firm performance effects (in sales as well as profits) are likely being driven by top line revenue growth.

[36] That said, Online Appendix 30 compares the cost structure of shifting and nonshifting firms. We do not find evidence that firms in the Shift group increased their costs (in levels or percentage terms) more than firms in the No Shift group. In fact, the opposite pattern appears; shifting firms have *lower* costs relative to nonshifting firms by the time the endline was conducted. The differences are not statistically significant, however, and this analysis is only descriptive. Nonetheless, it sheds some light on the cost and supply-side economics of shifting a firm's marketing strategy; namely, it is not necessarily a cost-prohibitive option for firms.

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