Policy Brief: Street Business School Randomized Control Trial

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1 Introduction

This document presents results from the Street Business School (SBS) randomized controlled trial (RCT), which began in August, 2018 and concluded in December, 2022. In total, 940 women across five communities participated in the study: 163 in Kayunga, 220 in Lukomera, 185 in Kibiri, 217 in Nakifuma, and 155 in Buikwe. In each community, SBS coaches conducted mobilization and hosted an orientation day, where women decided whether they wanted to be part of the study. After orientation, we sent out our independent team of enumerators to conduct a baseline survey. At the end of the baseline survey, we randomly assigned women to SBS (group A), SBS with office hours instead of home/business visits for all participants (group B), or a control group (group C).

Over the six months following the baseline survey, SBS coaches implemented their program as usual in group A, meaning that they implemented all of the usual learning modules and met with each woman for individual coaching at her home or business. The coaching visits were a substantial part of the program and women in group A knew beforehand that they would receive them. In group B, coaches followed the same schedule of delivering modules but scheduled set days when participants could attend office hours for individual help. Coaches strongly encouraged every woman in group B to attend at least one of these sessions, or to stay after one of the modules to discuss individual challenges. Based on the coaching data shared by SBS, 75% of women in group A participated in at least one coaching session and 45% of group B did so. After six months, the coaches hosted a graduation ceremony for those women who completed the program. Our independent team of enumerators conducted exit surveys in the weeks immediately following graduation, then returned 12–18 months later to conduct a final endline survey.[1] We also sent weekly SMS surveys to all participants starting after the baseline survey and continuing through the endline survey.

We show results using a graph like Figure 1. The vertical axis shows the two treatment groups: group A, meaning the group that participated in SBS with full, individual mentoring and group B, the women who participated in SBS using office hours rather than individual visits. The horizontal axis describes the outcome in question as well as the scale used to measure it. For many outcomes, we show the percentage change from the control group. For instance, if monthly profits are UGX 10,000 on average in the control group and UGX 15,000 on average in the treatment group, then we would say that SBS led to a 50% increase in monthly profits for the average woman. We show effects on psychometric outcomes using a simple change in levels, but we always provide context for these level changes in the text accompanying each figure. Finally, for some outcomes we show a percentage point (pp) change. For instance, if 60% of women in the control group own a business and 80% of women in group A own a business, we say that SBS led to a 20pp increase in business ownership. It is important to note that pp changes are not the same as percentage changes: in this example, a 20pp increase for group A corresponds to a 33% change.

For each outcome of interest, we show results that combine the exit and the endline survey then show results only using the exit survey and only using the endline survey to give a sense of how the impacts of SBS may change over time. The colored dots show the average change due to SBS A and B, respectively. In other words, the dots show the difference between the outcome for women in each

[1] Differential timing of endline surveys is due to COVID regulations that prevented travel between districts and in-person data collection for a period of the study.

SBS group compared to women in the control group. The different colors represent different ways that we can estimate this effect to provide a sense of how much the results change depending on our estimation strategy. In general, our most preferred estimation strategies are the ones in orange and grey (the two lower dots).

The lines on either side of the dots are 95% confidence intervals. When these lines do not overlap with zero, we say that the impact relative to the control group is statistically significant. To be exact, when the 95% confidence interval does not overlap with zero, then there is less than a 5% chance that the average effect we are measuring is actually zero. Occasionally we say that an effect is "only significant at the 10% level". This simply indicates that a result is statistically significant at a lower level: there is less than a 10% chance that the average effect we are measuring is actually zero. When the lines between groups A and B do not overlap, we can also say that the change for groups A and B is statistically significantly different. For example, in the leftmost panel in Figure 1, the 95% confidence intervals do not overlap with zero for either SBS group, so we see that both versions of SBS significantly increase business ownership. However, the 95% confidence intervals between groups A and B do overlap, so we see that there is no statistically significant difference between the two versions of SBS. This means that group A (the one with regular mentoring visits) is not more successful than group B that only had office hours.

2 Business Outcomes

First, we present outcomes on business creation. Figure 1 shows the effect that each version of SBS had on the number of women owning a business. The middle panel shows that upon graduation from SBS, women in group A were 16.8pp and women in group B were 19.6pp more likely to own a business than women in the control group. For context, 56.6% of women in the control group owned a business at the exit survey. The difference in business ownership relative to the control group declines to 4.8pp for group A and 7.5pp for group B by the time of the endline survey, neither of which is statistically significant. However, the smaller difference is entirely due to more women in the control group owning businesses at endline relative to exit. Business ownership rates for groups A and B remain virtually unchanged between exit and endline, at around 70%.

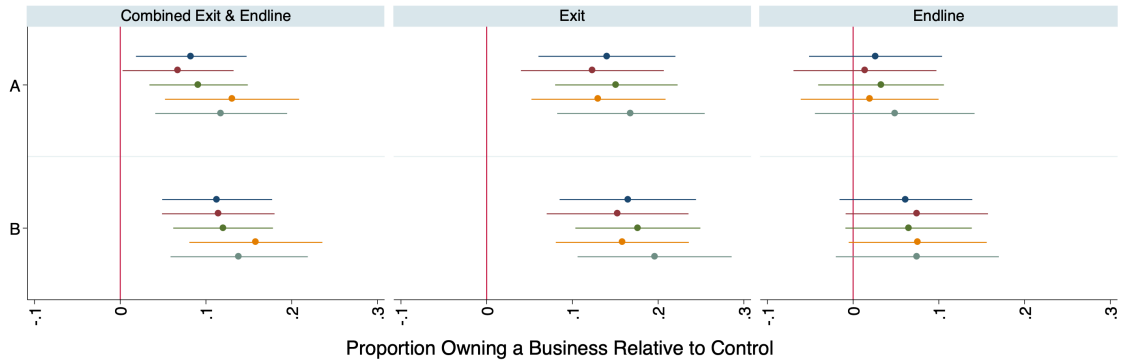

Figure 1: Impact of SBS on Business Ownership

Figure 2 shows the effect of SBS on sales revenues. We ask each woman who owns a business to recall their total sales revenue over each of the seven days prior to the survey.[2] We record zero for all women who do not have a business in a given survey round, a practice that we implement for all business measures. This is because we cannot randomly assign which women choose to start businesses, so only comparing women with businesses between treatment and control is not a valid comparison. Note that this means that some of the effects that we measure on business outcomes are driven by overall higher business ownership among women who participated in SBS.

At graduation from SBS, women in group A report sales that are 124.8% and women in group B report sales that are 174.4% higher than women in the control group. At endline, this drops to 50.5% for group A and 148.6% for group B, with only the effect for group B remaining statistically significant. As for business ownership, the smaller difference at endline between group A and the control group is due to increased revenue from women in the control group, not a decline in revenue for women in group A. Group B continues to see substantial growth in revenues between exit and endline. For context, average sales revenue over the last 3 days at endline is UGX 36k for group A, UGX 50k for group B, and UGX 47k for group C.[3]

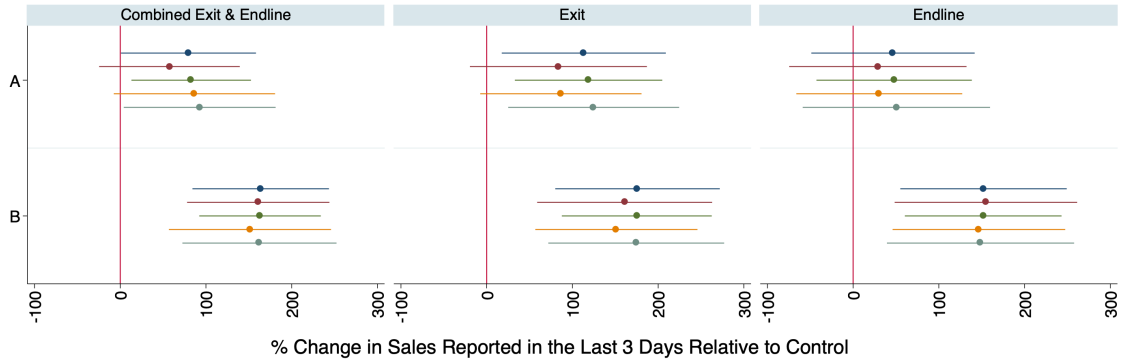

Figure 2: Impact of SBS on Revenue

Beyond asking about sales revenues during in-person surveys, each participant in the study received a weekly SMS survey asking them to respond with their total sales revenues from the previous day. We randomly assigned which day each participant received the SMS survey (Tuesday through Saturday) to avoid bias in reporting, and we provided a small amount of airtime as an incentive to respond. Overall, around 85% of participants responded to the SMS survey at least once, but only 53% responded at least half of the time. Response rates are not correlated with treatment assignment but are correlated with certain participant characteristics. For instance, older participants and participants who have a larger social network at baseline tend to have higher response rates. Therefore, we interpret the results from the SMS surveys as only being representative of the population of women who are most likely to have regular access to a cellphone.

[2]Results look similar if we use a shorter or longer recall period. We show results for 3 days prior to the survey because it is the measure that we pre-registered.

[3]Our estimates for the percentage change relative to group C are positive even though the mean is higher in levels because we control for baseline revenues and because we use a standard transformation of the data that accounts for the highly skewed distribution of revenues.

We take the average of each woman's answers in each month of the experiment and estimate monthly impacts of SBS. Figure 3 shows the results, combining groups A and B to increase statistical power. Note that Figure 3 uses 90% confidence intervals, as our monthly estimates from the SMS survey are less precise due to lower response rates than the in-person surveys. The results generally show few impacts during the first six months of the experiment, when participants are learning all of the SBS modules and participating in coaching. However, we see a significant increase in sales relative to the control group shortly after graduation. This effect continues to grow for the six months following SBS, then starts to become slightly smaller and not always statistically significant. In short, the SMS results confirm our results from the in-person survey and provide insights into when the average participants' business starts to grow in revenues.

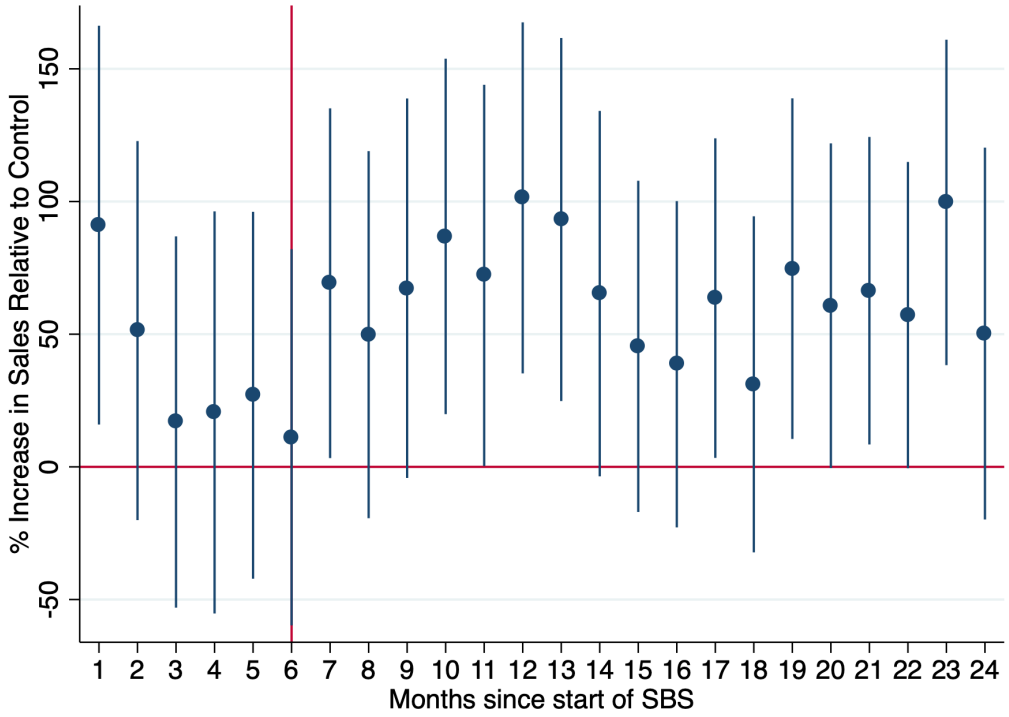

Figure 3: Monthly Impacts of SBS on Sales Revenues from SMS Surveys

While sales revenue give some sense of the impact SBS has, our preferred measure of impact is profits. We measure profits using a question that has been carefully validated: "What was the total income the business earned last month after paying all expenses including wages of employees, but not including any income you paid yourself. That is, what were the profits of your business last month?" (de Mel et al. (2009)) Figure 4 shows the results. Upon graduation from SBS, women in group A have profits that are 179.8% and women in group B have profits that are 278.6% higher than those of women in group C. At endline, this declines to 34.2% for group A and 119.1% for group B, with only the impact for group B remaining statistically significant. Again, this is entirely due to group C catching up: average profits for group C are UGX 69k at the exit survey and UGX 77k at the endline

survey, while average profits for group A and B remain virtually identical between the two survey rounds (UGX 75k for group A and UgX 80k for group B).

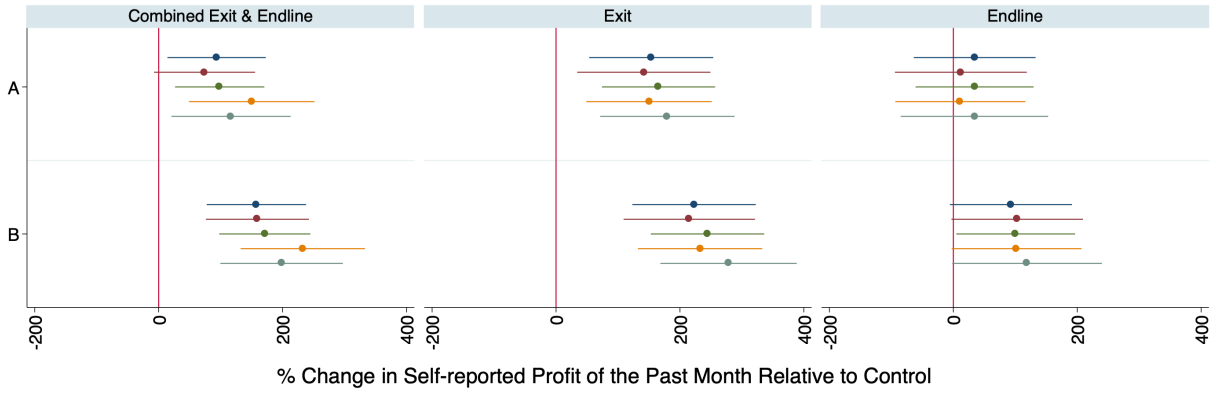

Figure 4: Impacts of SBS on Monthly Profits

We are also interested in learning how business practices might change as a result of participating in SBS. We measure six aspects of business management: savings, monetary investment in the business, hours per day spent on the business, and "scores" for business tracking, pricing management, and goal setting.[4] Figure 5 shows results for savings, investment, and time spent on the business. We see no significant change in the total amount being saved. We only ask whether respondents have made any investment in their business, not the level of investment. We see no significant impact on this binary measures of investment, but it is worth noting that over 98% of women in the control group report investing in their business, leaving little room for any positive impact. The bottom panel in Figure 5 shows impacts on the number of hours worked in the business per week. Although our estimates are less precise here, they are large: on average, women in group A are working 7.5 hours more and women in group B are working 12.4 hours more on their business each week than women in group C at the exit survey. These differences decline to 2.5-4 hours by endline, again due to increases in the number of hours women in the control group are spending on their business.

[4]We call these scores because we define them by adding up the results to multiple survey questions rather than deriving them from a single survey question like we do for our other measures.

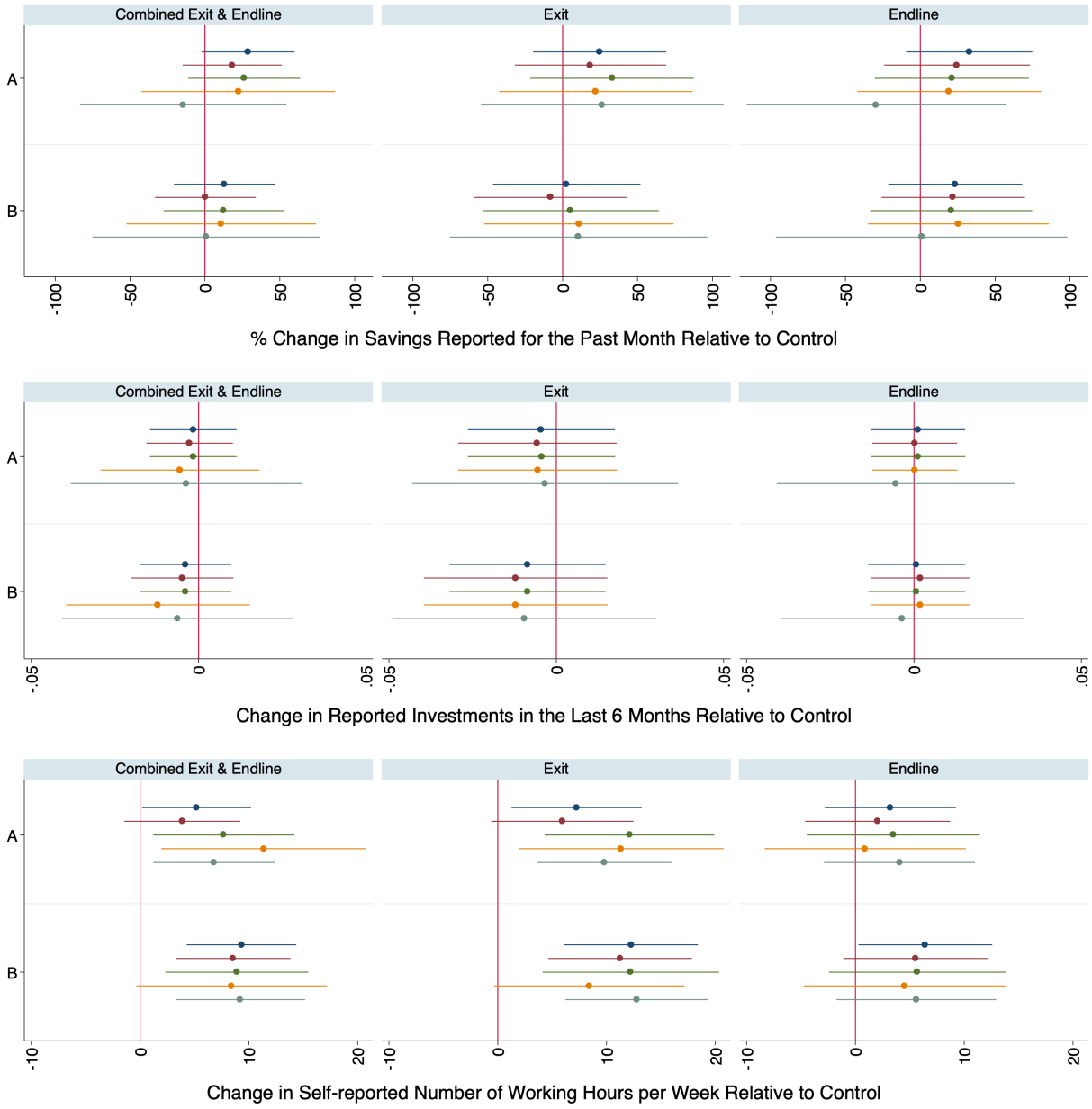

Figure 5: Impacts of SBS on Business Practices

Figure 6 shows impacts on our scores for business tracking, price management, and goal setting. Our score on business tracking runs from 0 to 3. Participants get one point if they have a system for keeping track of their business activities, if they have a way to track which customers buy from them on credit, and if they have a system to keep track of inventory. The top panel in Figure 6 shows that scores are 0.33-0.34 higher at exit for women in group A and B relative to control (for context, this is around 35% higher than scores in the control group at exit). These differences decline at endline, likely because more women in the control group have started businesses and are using similar practices. The

middle panel shows results on our price management score, which runs from 0 to 4 and assigns one point if the respondent has compared alternative suppliers, visited a competitor, tried to negotiate a lower price with their supplier, or offered special prices to attract new clients in the past six months. Again, we see that both groups have higher scores than control at exit but the differences do not remain statistically significant at endline. Finally, we compute our goal setting score by assigning a point if the respondent has a goal for profits in the next month, profits in the next year, and if they have an estimate of how much they can spend in business expenses over the next year. We again see significantly higher goal setting scores at exit, but in this case the impacts appear to persist through the endline survey even though they are no longer statistically significant.

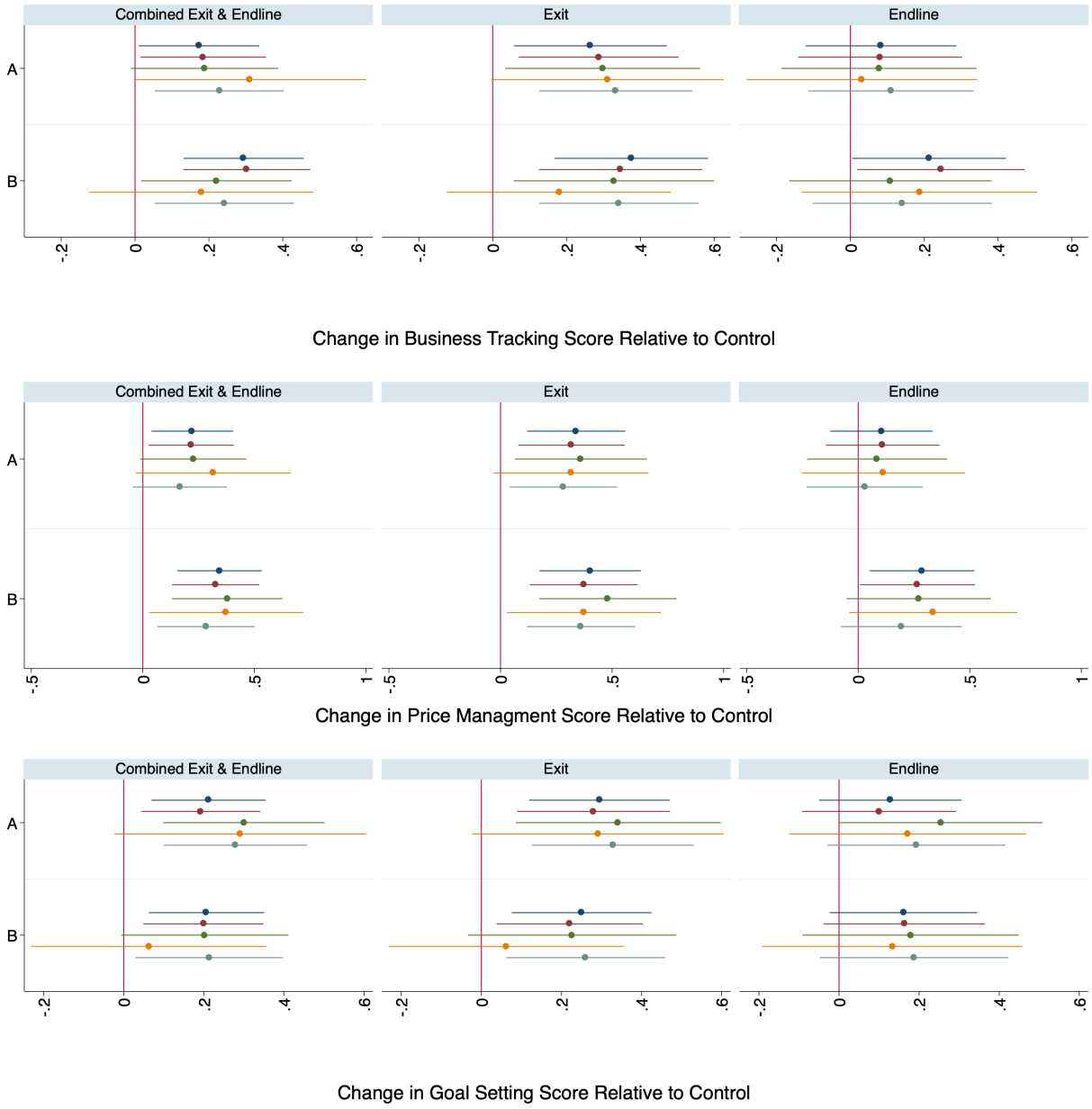

Figure 6: Impacts of SBS on Business Management Practices

3 Psychometric Outcomes

We measure a range of psychometric outcomes to understand how participating in SBS may change the way women think about themselves and their position within their communities. First, we measure locus of control. Following the literature in psychology, we ask questions to measure three aspects of locus of control: internality, powerful others, and chance (Levenson (1973)). Each measure combines the results to multiple survey question. Positive impacts on internality would indicate that women who

participate in SBS have a more internal locus of control, meaning that they have a stronger belief that their own actions influence their outcomes in life. Positive impacts on powerful others would indicate that women who participate in SBS do not have a strong belief that their lives are chiefly controlled by other powerful people. Positive impacts on chance would indicate that women who participate in SBS attribute fewer outcomes in life to chance or luck. Figure 7 shows impacts on all three dimensions of locus of control. We do not see any significant differences between either group and the control group.

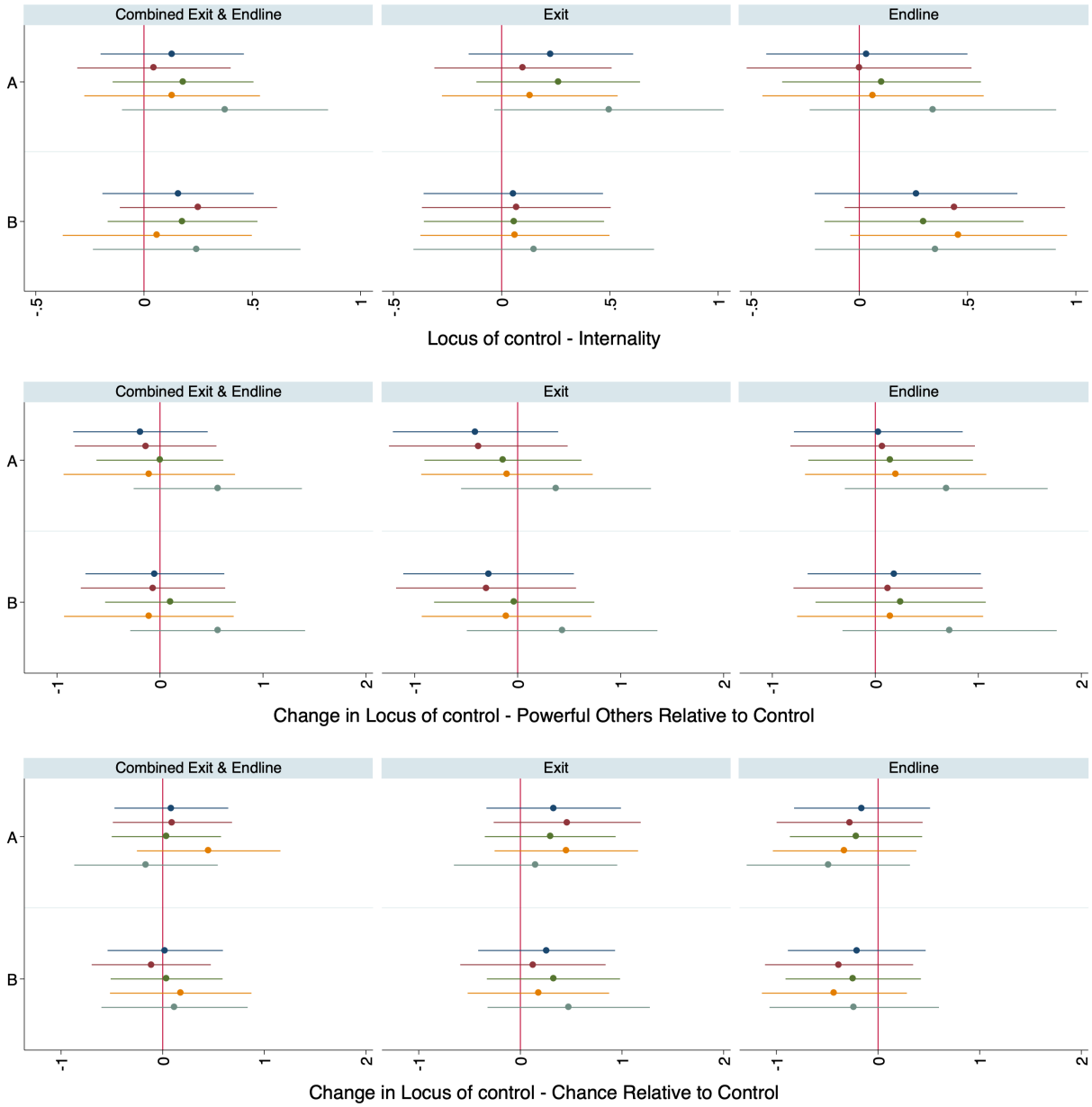

Figure 7: Impacts of SBS on locus of control

The next psychometric measure we elicit is self-efficacy. Again, we follow the literature in psychol-

ogy and ask a range of questions that we combine into a single measure of self-efficacy (Schwarzer and Jerusalem (1995)). Figure 8 shows the results. As with locus of control, we see no significant impacts on self-efficacy.

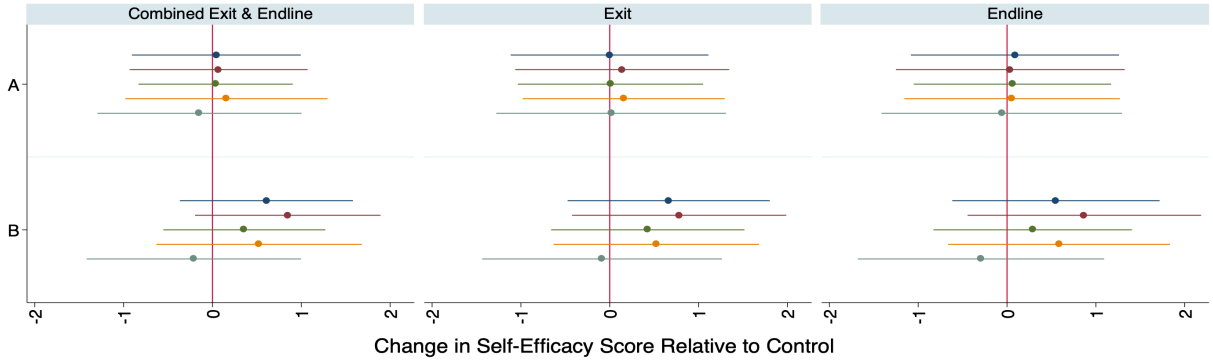

Figure 8: Impact of SBS on self-efficacy

Next, we consider "grit". Here, we ask a set of questions designed to measure women's perceptions of their ability to persevere, cope with setbacks, and improve over time (Duckworth et al. (2007); Duckworth and Quinn (2009)). Figure 9 shows the results. While we do not see any significant differences between group A and the control group, certain specifications do show that, on average, women in group B have significantly higher grit than those in the control group. While results at endline are only significant at the 10% level, the size of the effect remains relatively constant between exit and endline. The size of the impact on group B is relatively small (a 3-4% increase over the average in the control group); however, this is in line with interventions that have explicitly targeted grit.

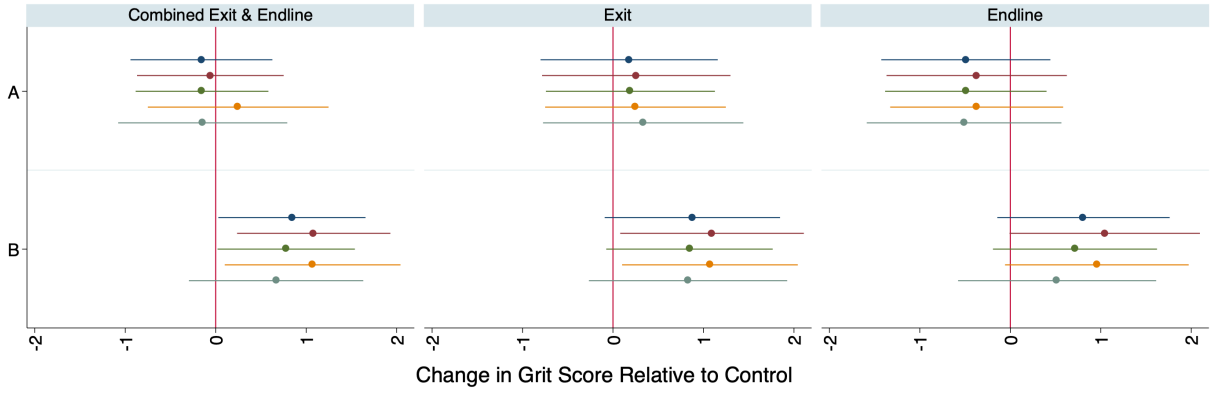

Figure 9: Impacts of SBS on grit

We ask three questions to elicit respondents' views of their current and future social status. We use a picture of a ladder with ten rungs and tell each respondent that the top rung represents the people in their community with the highest social status, and the bottom run represents those with

the lowest social status (Adler et al. (2000)). We then ask where the respondent sees themself currently, where they expect to be in ten years time, and where they wish or aspire to be in ten years time. We then compute the change in expected social status as the difference between current social status and expected social status in ten years, and the change in "aspirational" social status as the difference between current social status and wished for social status in ten years.

Figure 10 shows the results. We do not see any significant changes for group A relative to the control group, but we do see that women in group B have significantly higher aspirational social status at exit than those in the control group, though the difference is only significant at the 10% level. The size of the effect remains constant between exit and endline, but becomes slightly less precise and therefore not statistically significant at endline (focusing on the estimate in grey at endline).

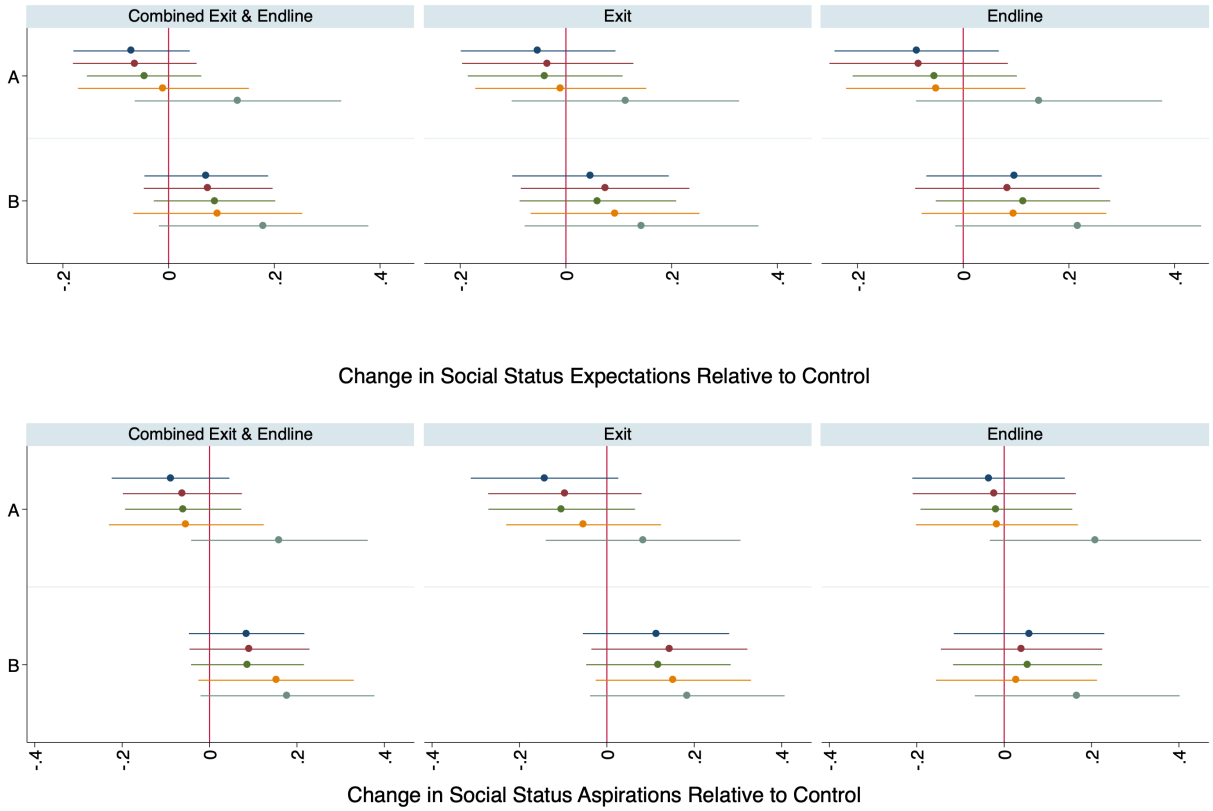

Figure 10: Impacts of SBS on expectations and aspirations of future social status relative to current social status

Finally, we elicit each woman's expected and aspirational future income (ten years from the date of the survey) relative to her current monthly income. Figure 11 shows the results. We see no significant differences between the groups in terms of income expectations during the exit survey, and slightly negative impacts for both group A and group B at the endline survey, though not all estimates are statistically significant. We see similar patterns for income aspirations, although none of the differences are statistically significant. The negative impacts appear to be due to higher current income, as we find no statistically significant differences in the level of future expected or aspirational income between the

three groups. Put otherwise, women in groups A and B are earn more income at the exit and endline survey than women in the control group, but their expectations for the future are not significantly higher than those of women in the control group. When we take the difference between current and future income, this leads to the negative impacts in Figure 11.

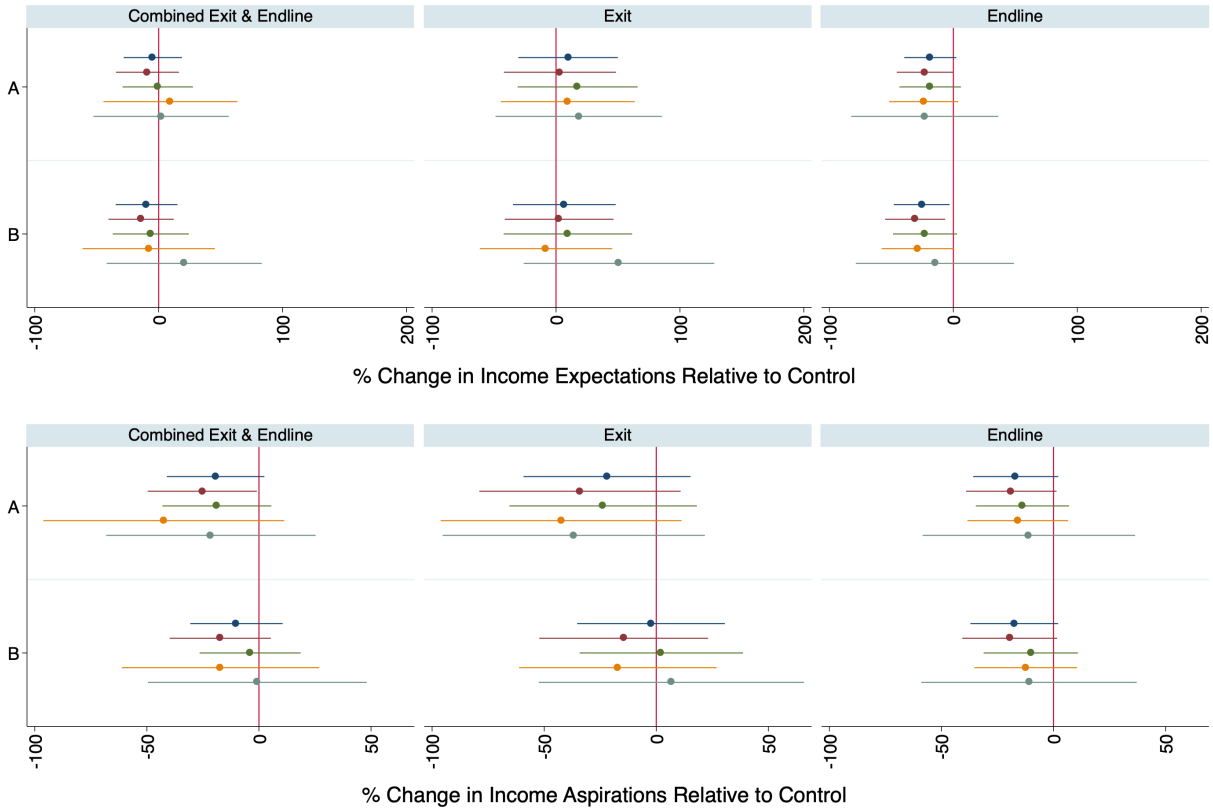

Figure 11: Impacts on expectations and aspirations of future income relative to current income

4 Household Outcomes

We are interested in the effects that SBS has on households of women in the two treatment groups compared to women in the control group. We measure contributions to household expenditures by the women themselves, their spouses, and other household members. As above we present results pooled for both survey periods and separately for each survey round in Figure 12. Although effects are not statistically significant, the results on contributions by women in the treatment groups mirror our results on business success. At endline, women in group B contribute more to household expenses compared to women in the control group. Women in group A do not seem to increase their household contributions. The negative effects at exit can potentially be attributed to a shift in expenses towards newly created businesses.

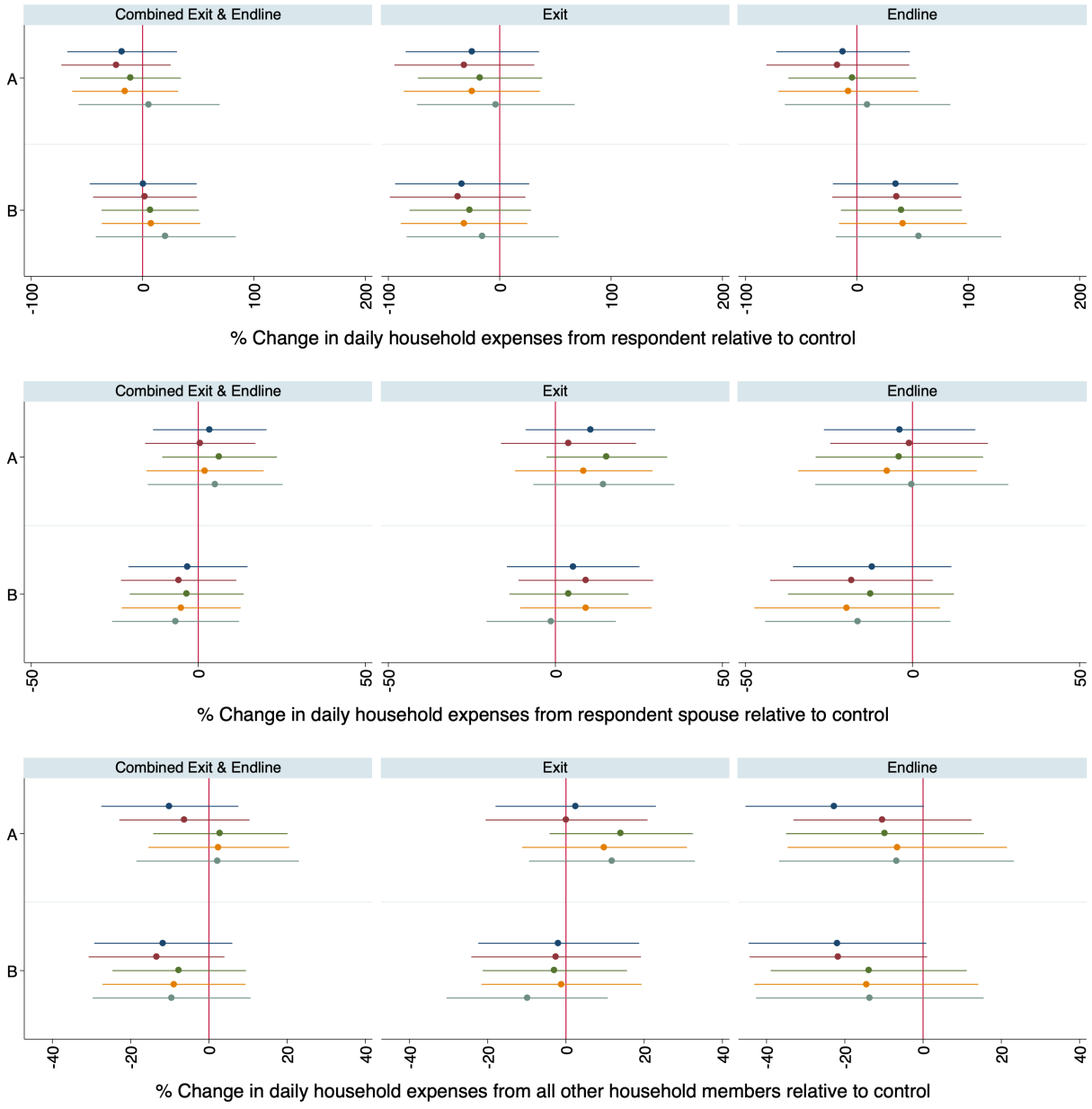

Figure 12: Impacts of SBS on Contributions to Household Expenditures by Household Members

Looking at the overall effects of SBS on households, it seems that the positive effect of SBS on household contributions from the women in SBS is offset by a decrease in contributions by other household members. For group B (although not statistically significant) our results seem to indicate that at endline, when women are able to contribute more, spouses as well as other household members decrease their contributions.

5 Intergenerational Spillovers

We measure a variety of outcomes on the children of women in the RCT. For each of these outcomes, we estimate two different impacts from SBS. The first is the impact due to living with a woman in group A or B relative to living with a woman from the control group. These are the impacts labeled "A" and "B" in the figures in this section. We also measure secondary impacts based on how many women in each group are in a child's social network, which we identify using photobooks. These are the impacts labeled "A (network)" and "B (network)" in the figures in this section. These tell what the impact is for each additional woman in a child's network from group A or B.

First, we ask how many days the children attend school in a typical week and how many hours per day they attend school in a typical day. Figure 13 shows the results. We do not see any significant impacts on days per week attending school, but we see that living with a woman in group A has a positive impact on the hours per day attending school: a 30% increase relative to children living with women in the control group. We also see a negative impact on hours per day attending school for each additional woman in group B in a child's social network, but the effect is not consistent across our different estimates.

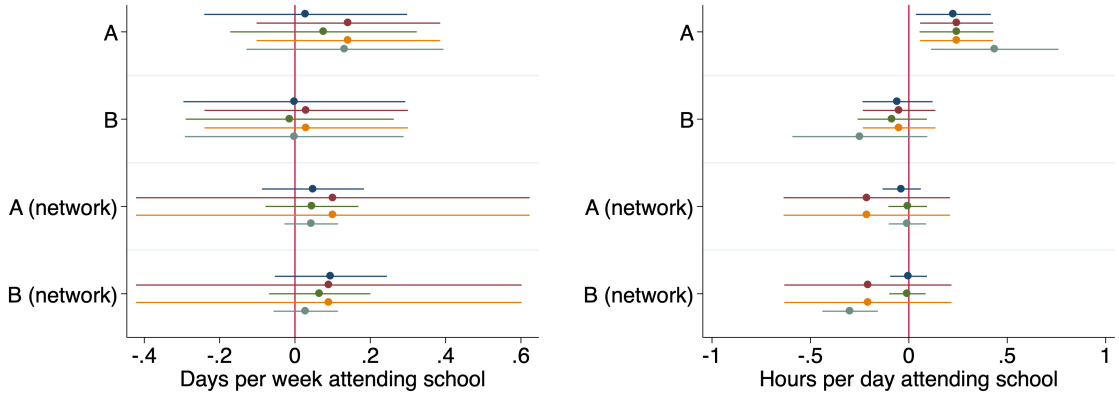

Figure 13: Impacts of SBS on children's schooling outcomes

Next we consider changes in work outcomes for children: whether they ever work for money and how many hours per day they typically work. Figure 14 shows the results. We see a small reduction in the likelihood of ever working for money from both network measures, but not from living with a woman in group A or B. We see no significant change in hours worked per day for either group.

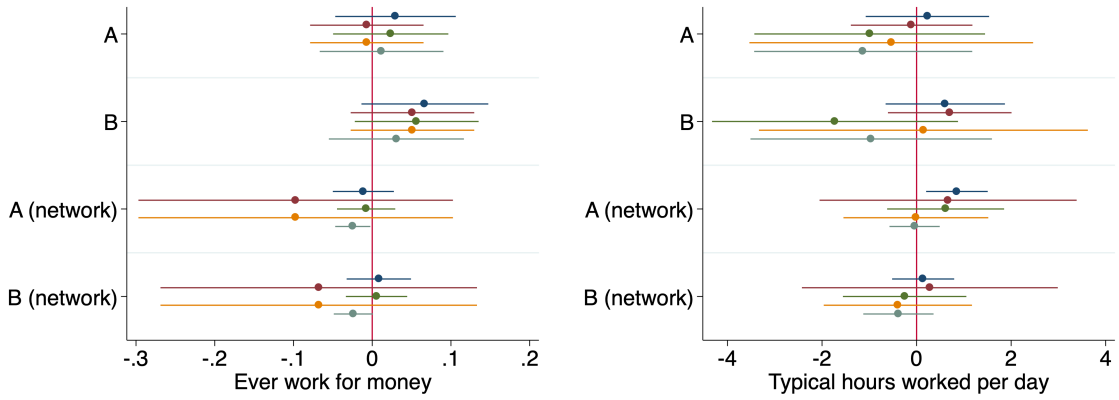

Figure 14: Impacts of SBS on children's work

We additionally measure impacts on leadership (being a leader in your school or community), locus of control (Nowicki and Strickland (1973)), and self-efficacy (Bandura et al. (1999); Muris (2001, 2002)). As Figure 15 shows, we do not see any significant impacts on these measures from living with a woman in group A or B. We see small increases in our measure of leadership from each additional woman from group A in a child's network. Certain specifications show a lower locus of control for women in group B in a child's network, but the result is not consistent across different estimates.

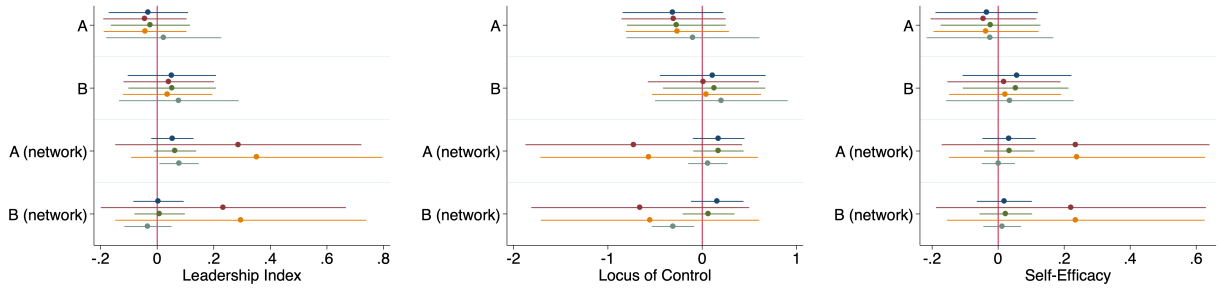

Figure 15: Impacts of SBS on leadership, locus of control, and self-efficacy

We are also interested in whether SBS changes children's role models and attitudes toward gender equality. We show three measures that speak to these questions: whether each child has at least one role model, whether each child has at least one female role model, and an index that combines multiple questions about gender equality (Dhar et al. (2022)). Figure 16 shows that we do not see any significant impacts on any of these outcomes.

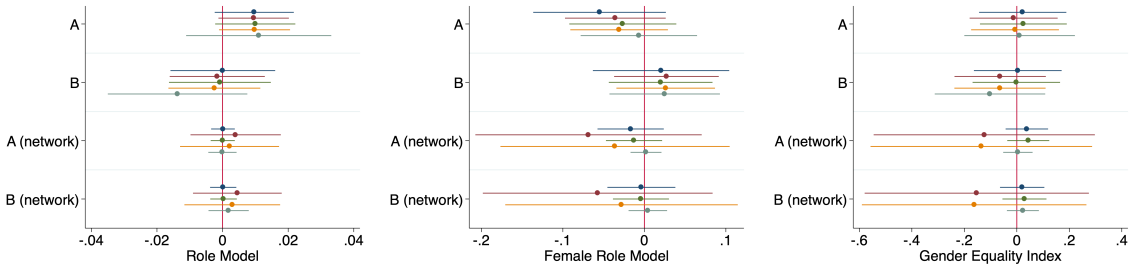

Figure 16: Impacts of SBS on role models and gender equality

Finally, we test to see whether SBS changes children's expectations and aspirations for the future. We ask a number of questions about the future dealing with income, age at marriage and birth of the first child, and the number of children expected and desired. We combine the answers of all of these questions into two index variables: one for expectations and one for aspirations. Figure 17 shows that there are no significant changes in children's expectations or aspirations for the future.

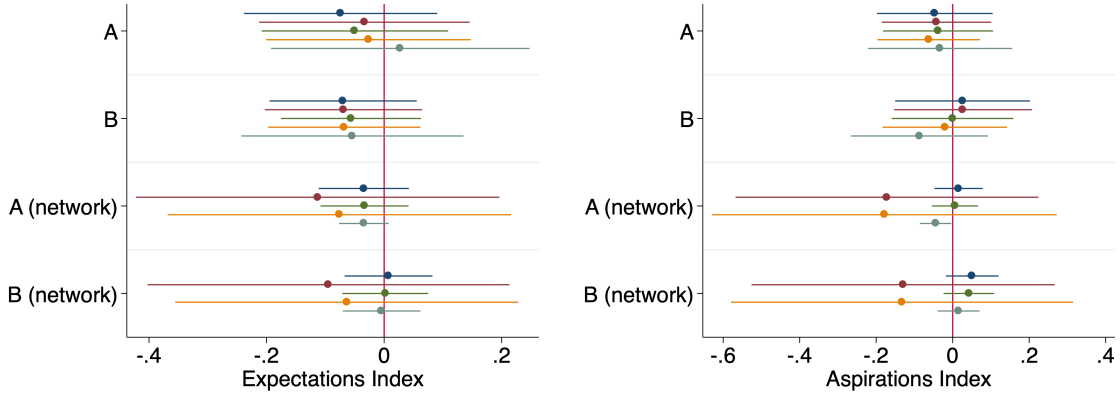

Figure 17: Impacts of SBS on children's expectations and aspirations for the future

6 In Progress

Given the size of the survey, a few pieces of analysis are still in progress. First, we added a module on household bargaining and intimate partner violence to the endline survey in the last four locations, so we are still working to analyze those outcomes. Second, we have yet to clean and analyze the data on expenditures on selected food items. Third, we are discussing ways to measure potential spillovers from women in SBS to women in the control group, either using variation in the timing of SBS in different locations or using our data on social networks within each location. Fourth, there are a few descriptive analyses that we may pursue such as incorporating data on coaching for groups A and B to better understand who selects into coaching, using demographic and other characteristics at baseline to see if we can predict who starts a business, and estimating differential effects by gender for children's outcomes. Finally, we collected detailed data on time use for all children that requires extensive cleaning, so we are continuing to work on analyzing children's time use.

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