2018

IMPACT AUDIT

TechnoServe

Women Mean Business

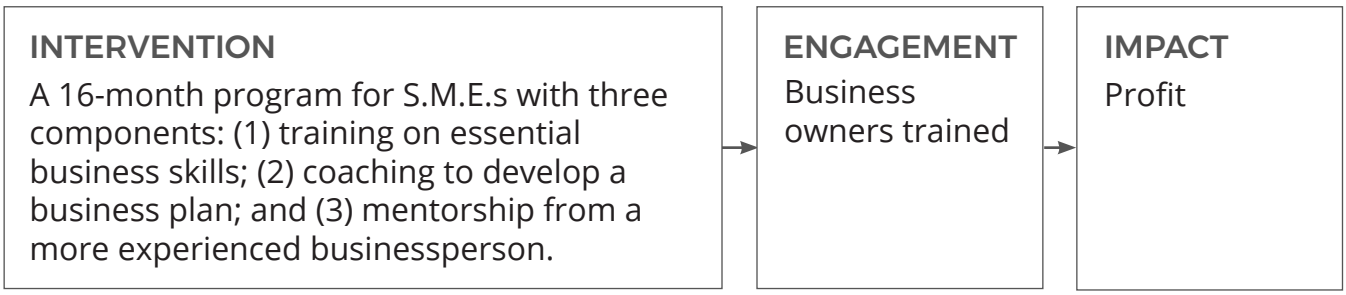
ImpactMatters

FINDINGS

Women Mean Business

MISSION To increase the profit of women-owned small and medium enterprises (S.M.E.s) in Uganda.

PROBLEM Businesswomen are not able to maximize the profitability of their S.M.E.s due to a lack of knowledge, financial access and social capital.



IMPACT AND COST

$1 in profit per $1 spent

IMPACT AND COST CALCULATION

A 1:1 benefit/cost ratio is modest, but it is likely an underestimate. Costs include TechnoServe's program expenses and exclude, to the extent possible, costs it incurred for a randomized controlled trial of the program. The benefit/cost ratio remains 1:1 if costs incurred by business owners and organizations that donate training services are added. We extend benefits six years after the end of the program (three years after the last survey of participating business owners), which might be an underestimate. From the perspective of women business owners, profits rose $17 per business for every $1 that owners invested in their businesses.

QUALITY OF EVIDENCE

★★★

QUALITY OF EVIDENCE ASSESSMENT

The estimate of impact is based on a high quality randomized controlled trial of the program, conducted over five years. The study found an increase in profits for businesses in the treatment group, relative to businesses in the control group. Though the result was not significantly different from zero, it did not fade at the five-year mark. It was also consistent with increases in take-home pay, which were statistically significant.

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Feedback

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EXECUTIVE SUMMARY

Program Description and Key Findings

The stated mission of TechnoServe's Women Mean Business program was "to improve the performance of women-owned small and medium enterprises (S.M.E.s) in Uganda." ImpactMatters estimates the mission-driven impact of Women Mean Business as the increase in the profit of S.M.E.s owned by women in Uganda, net of the changes in profit they would have experienced even in the absence of the program.

Toward this goal, TechnoServe designed the program to address the constraints faced by women business owners, such as their lack of knowledge, financial reserves and social networks. Women Mean Business addressed these constraints in three ways:

- **Classroom-based group training** for businesswomen, delivered over four months. Topics included financial management, marketing, customer service and human resources.
- **Coaching** provided by local business students over a six-month period to diagnose issues in the business and develop business plans.
- **One-on-one mentorship** provided by experienced businesspeople over the course of four months to help execute the newly developed business plans.

This impact audit reviews implementation of the program from 2012-13. Over that period, a total 450 women entrepreneurs participated in at least one of the above activities.

ImpactMatters estimates each woman entrepreneur earned an additional $2,600 in profits (revenues net of all costs) above what she would have earned in the absence of the program over six years. From the point of view of TechnoServe — taking account of only its costs (other than money spent on a randomized controlled trial) — we estimate that Women Mean Business boosted the profits of the average participating business by $1 for every $1 that TechnoServe spent on the program (a benefit/cost ratio of 1:1).[i] If we count both TechnoServe's costs and business owners' costs incurred from participating in the program, the benefit/cost ratio remains 1:1. Finally, taking account of only business

[i] All impacts and costs are presented in 2016 U.S. dollars.

owners' costs and not those of TechnoServe, profits rose by $17 per business for every $1 that business owners spent because they participated in the program.

Our estimates are based on high quality evidence. TechnoServe and Innovations for Poverty Action (I.P.A.) conducted a four-year randomized controlled trial (R.C.T.) to measure the impact of Women Mean Business on profits. We base our estimate of impact on the results of the R.C.T., adjusted for the probability of business survival and conservatively extended two years after data collection ended. (The results from the R.C.T. have not yet been publicly disseminated. The figures we quote here are preliminary and subject to change in the final analysis.)

Impact and Cost

BENEFIT/COST RATIOS

We calculate three benefit/cost ratios: one from the perspective of TechnoServe, one from the perspective of women business-owners and a third from a societal perspective (counting all costs caused by the program, regardless of who bears the costs). The three ratios share the same numerator: a total increase in profits for women-owned S.M.E.s of $2,600 over six years.

The denominator of the first benefit/cost ratio is TechnoServe's cost of delivering the program, $2,800 per business owner. The resulting benefit/cost ratio is 1:1. For every $1 that TechnoServe spent on the program, the average business owner reaped $1 in additional profits, net of counterfactual effects (gains or losses she would have experienced had she, counter to fact, not participated in the program). We think the 1:1 ratio might underestimate the true impact of Women Mean Business, as we discuss below.

The denominator of the second benefit/cost ratio is the average businesswoman's cost to participate in the program, $160. The ratio from the businesswoman's perspective is an impressive 17:1, meaning profits increase by $17 for every $1 the businesswoman spends as a result of her participation.

To calculate the impact of the program, we draw from I.P.A.'s R.C.T. of Women Mean Business, which estimated an increase in profits of 7 percent, averaged across nine rounds of surveys conducted after the program ended. Profits of the treatment group rose above those of the control group immediately after the intervention and remained higher for a total of about three years, with no tapering off. Though the result was not

significantly different from zero, we are encouraged by the sustained trend and by the concomitant 18 percent increase in take-home pay, which was statistically significant. Note that the R.C.T. was based on "intent-to-treat" analysis, meaning that it calculated the impact of the program on all those who were offered it, rather than only those who participated. Because only 57 percent of invitees participated in the program, the effect of including non-participants in the intent-to-treat analysis is potentially high and might dilute the R.C.T.'s estimate of impact.

After the end of I.P.A.'s data collection, we assume impacts persist for three more years, falling to zero in the eighth year after the start of the program. (If we are wrong in assuming that impacts last for three years after the R.C.T., our estimates of impact are almost surely too low.) The result is $2,600 in additional profits accruing to each participating business over the six years after the program, net of counterfactual success.

The $2,600 figure might be an underestimate, owing to the above analytical decisions, which are conservative in that they would tend to undervalue the impact of the intervention.

DISPLACEMENT AND OTHER EFFECTS

Women Mean Business may have had other effects not captured in our estimates of impact.

In our assessment, the effect of the program on the empowerment of women is ambiguous. While Women Mean Business improved women's economic independence and their confidence in running their businesses, it may have led to intra-household conflicts. A study of another business-support program in Uganda found the husbands of participating businesswomen tended to exert more control over their wives than in the absence of the intervention, siphoning money from their wives' businesses.

It is possible participating firms took business away from non-participating firms, but the Women Mean Business R.C.T. found weak evidence to support such displacement. It also found no evidence that participating firms shared their newly gained knowledge and skills with non-participants.

Lastly, the program might have had positive effects on economic growth, as S.M.E.s account for a large portion of economic activity in Uganda. By supporting S.M.E.s, TechnoServe might also indirectly support those employed by S.M.E.s and the farmers, manufacturers and retailers with whom S.M.E.s do business. However, the evidence of such effects, including from the Women Mean Business R.C.T. itself, is inconclusive. This

may be at least partially explained by the diffuse and delayed nature of effects on economic growth.

Quality of Evidence 

The impact of Women Mean Business has been validated by an R.C.T., the highest quality source of evidence in the social sciences. Over about four years, the R.C.T. tracked the outcomes (including revenues, expenses, profits and take-home income) of businesses randomly assigned to participate in the program. It also tracked businesses randomly assigned into a control group. This allowed TechnoServe and third-party evaluator Innovations for Poverty Action to estimate the gains to participating businesses, above the gains they would have experienced in the absence of the program, as represented by the control group.

The R.C.T. was both well-designed and well-conducted. The evaluators attempted to survey the complete sample of 1,300 businesswomen and achieved high survey response rates throughout the study period, an average of 85 percent. Repeated, frequent follow-up surveys on both treatment and control groups ameliorated the noisy data from fluctuating business sales and expenses and imperfect record-keeping.

NONPROFIT COMMENT

[PLACEHOLDER FOR COMMENT FROM TECHNOSERVE ON THE REPORT]

PROGRAM DESCRIPTION

This section summarizes the program's mission and constructs a theory of change that describes the problem, TechnoServe's intervention and ImpactMatters' chosen measure of impact.

Mission

To increase the profits of women-owned small and medium enterprises (S.M.E.s) in Uganda.

TechnoServe's stated mission for Women Mean Business is to "improve the performance of women-owned S.M.E.s in Uganda."[1] ImpactMatters measures achievement of this mission as the increase in profits caused by the program among participating businesses.

Theory of Change

PROBLEM

Businesswomen in Uganda are not able to maximize the profitability of their S.M.E.s due to a lack of knowledge, financial access and social capital.

LACK OF KNOWLEDGE

Female entrepreneurs in Uganda lack both formal, general education and training in business skills. According to the 2011 Demographic and Health Survey (D.H.S.) in Uganda, 80 percent of women aged 15 to 49 living in urban areas have not completed secondary education.[2] Educational attainment is somewhat higher for men: 69 percent of men aged 15 to 49 in urban areas have not completed secondary education.

TechnoServe staff suspect women's educations and careers suffer when they get married and have children too young.[3] In the regions where Women Mean Business is implemented, women get married for the first time when they are 17 to 21 years old, and have their first child between age 18 to 20.[2] 17 percent to 42 percent of married women in Women Mean Business regions want to have fewer children or have children less frequently, but do not have access to contraception. Meanwhile, the average man in Uganda is 23 years old at his first marriage and 40 percent of the time is the sole decision-maker about his wife's health care. While both male and female entrepreneurs could benefit from more education, ingrained social norms likely contribute to women's lower educational attainment relative to men.

According to the TechnoServe staff, women with little education tend to go into "easy lines of business," like beauty salons and general merchandise shops.[3,4] But these sectors are often overcrowded, with S.M.E.s struggling to differentiate themselves from the competition. The result is frequent births and deaths of businesses, very few of which survive long enough to generate a profit.

Women also lack business skills and knowledge because they have less work experience than men, especially in the formal sector. About 80 percent of married women aged 15 to 49 are employed, compared with 99 percent of men. And women are more than twice as likely as men to receive no payment for their work, whether in cash or in kind.[2] This may indicate that women are more likely than men to be engaged in the informal sector rather than the formal sector. A woman's learning curve after starting up her own business in the formal sector might be steeper than for her male counterparts.

LACK OF ACCESS TO FINANCE

Without the business skills and knowledge to open bank accounts and register their businesses, businesswomen suffer the knock-on consequence of not meeting the requirements for a loan application.[3] Furthermore, women in Uganda own fewer assets than men for which to use as collateral. 78 percent of women in urban areas do not own a house and 72 percent do not own land, whereas 63 percent of men in urban areas do not own a house and 55 percent do not own land.[2]

LACK OF SOCIAL CAPITAL

Female entrepreneurs tend to have weak professional networks because they have little work experience and higher education.[3] They cannot tap into their networks as easily as men to obtain business advice, new sales leads, connections with suppliers and consultants, job referrals, loan guarantees and so on.

ACTIVITIES

Women Mean Business is a 16-month technical-assistance program for women-owned S.M.E.s in Uganda. It is made up of three components: (1) classroom-based training on essential business skills; (2) coaching to develop a business plan; and (3) mentorship from a more experienced businessperson.

TARGETING

To be eligible for Women Mean Business, S.M.E.s must meet the following criteria:[4]

- Be owned or co-owned (at least 50 percent) by women aged 23 or older
- Female business owner must be able to read and write English
- Have at least one full-time employee
- Have been open for at least two years prior to the program
- Have an annual revenue of between $600 and $23,400[i]

A single businesswoman cannot enter more than one S.M.E. into the program; nor can a single S.M.E. send multiple representatives to participate in the program. In this impact audit, a businesswoman is synonymous with her S.M.E. as being a single "participant" in the program.

TechnoServe promoted Women Mean Business through radio announcements, business-service organizations and word of mouth. It also approached businesses in commercial areas directly, identifying more than 5,000 eligible S.M.E.s in the process. In 2012, TechnoServe received over 2,300 applications from businesswomen interested in the program, of which about 1,300 met the above targeting criteria. 806 businesswomen were then randomly selected to participate in the 2012-13 round of Women Mean Business. 491 were assigned to a control group that received no intervention. However, only 57 percent of the 806 invitees attended at least one program event.

CLASSROOM-BASED GROUP TRAINING

The program began with three training sessions in a classroom setting. Each session lasted two days at a time, and were delivered over a four-month period. Topics included financial management, marketing, customer service and human resources. Training was delivered by professionals from other organizations hired by TechnoServe. After the three

[i] Converted from 2012 Ugandan shillings into 2016 U.S. dollars using purchasing power parity exchange rates and annual (gross domestic product) inflation rates.

main sessions concluded, participants attended day-long "refresher" courses, spaced out over a six-month period.

Women Mean Business also offered sector-specific training sessions. S.M.E.s in the agricultural sector learned how to become suppliers to a leading supermarket chain, S.M.E.s in the manufacturing sector learned how to meet quality standards, and S.M.E.s in the education sector were trained on topics ranging from staff retention to child welfare.

COACHING

Women Mean Business provided S.M.E.s with customized coaching from students at local business schools. Each coach was assigned three to six participating businesses. For each business, the coach conducted a diagnostic exercise and then assisted the business owners in developing a three-year business plan using a template. TechnoServe trained and paid the coaches, who worked with S.M.E.s over six months.[3]

MENTORSHIP

After participants had developed their business plans, Women Mean Business provided about four months of mentorship to help them execute their plans.[4] Mentors were experienced businesspeople, management consultants and bankers recruited from TechnoServe's network. Mentors were trained over three days by Coach Africa Ltd. and paid a nominal fee to offset travel costs.[3,5] Mentors were assigned two to six participating businesswomen and met with each individually, at a minimum of twice a month, to advise them on the challenges they faced.[6]

GRADUATION

450 businesswomen "graduated" from Women Mean Business in 2013. They had to have participated in at least one program activity to be considered a graduate.[5]

MEASURES OF IMPACT

This impact audit measures success by the **increase in the profits of participating S.M.E.s attributable to the program**.

TechnoServe and research partner Innovations for Poverty Action (I.P.A.) collected data on profits made each month at all 806 businesses in the treatment group and 491 businesses in the control group. The researchers also collected data on revenues. But profit is a

better measure of business performance than revenue because profit nets out costs.[i] (For ease of interpretation, we work with annual rather than monthly revenues.)

By boosting the performance of S.M.E.s, Women Mean Business aimed to drive growth throughout the Ugandan economy. While the program might have increased the take-home pay of the individual businesswoman (a worthy metric that TechnoServe and I.P.A. also measured), it had grander ambitions than improving her wellbeing alone. S.M.E.s generate economic activity by hiring employees, doing business with other firms in the supply chain, borrowing money from banks and increasing choices for consumers. The more profitable an S.M.E., the more likely it is to spur economic activity. For both the wellbeing of businesswomen and overall economic activity, we focus on profit as the primary measure of programmatic impact.

TechnoServe's mission as an organization is to create more competitive farms, businesses and industries. It aims to increase economic activity across market systems, not limited to the market actors that participate directly in its programs. TechnoServe measures system-wide effects as the change in gross revenues of its program participants, reasoning that a share of those revenues is distributed to the farm laborers, financial institutions and other market actors with whom participants do business. As such, in TechnoServe's view, our chosen measure of impact (profits accruing to program participants) does not capture the full extent of its intended market effects.

We do not agree that change in gross revenue is a useful indicator, whether of benefits to the participant or to the market system. Focusing on change in gross revenue overlooks change in costs caused by the program. Further, the research community has yet to confirm the system-wide benefits of such programs as TechnoServe's. We believe our analysis of the change in profits accruing to program participants is an appropriate reflection of the impact of TechnoServe's programs. In the section on Displacement and Other Effects (in the Impact and Cost chapter), we also briefly discuss the potential benefits (and harms) to third parties.

[i] By profit, we mean gross revenues less cost of goods sold, operating expenses, interest, taxes, depreciation and amortization. Our other impact audits of TechnoServe programs refer to net revenue. By net revenue, we mean gross revenues less cost of goods sold.

ASSUMPTIONS

To achieve impact, most nonprofits rely on other entities outside of their immediate control to contribute certain resources. This was no less true for TechnoServe, which had to make reasonable assumptions about the resources contributed by S.M.E.s and about the individuals it hired to provide training, coaching and mentorship.

Participating businesswomen were trained to make myriad improvements to their businesses, from boosting product quality to creating marketing materials. Some of these improvements no doubt required an extra injection of funds, whether re-invested from the S.M.E.'s profits, taken from the businesswoman's own savings or on loan from some other source. Women Mean Business did not provide any funding to participating women; rather it, assumed that businesswomen were willing and able to invest in these improvements.

TechnoServe recruited business consultants, students from local business schools and experienced businesspeople to deliver the Women Mean Business program. In doing so, TechnoServe had to assume that these third parties were qualified to implement the program and would adhere to TechnoServe's requirements regarding the amount of time they would contribute, proper use of S.M.E.s' confidential information, and so on. To ensure the validity of this assumption, mentors and coaches signed contracts with TechnoServe and had to produce a written report for TechnoServe on their mentees' and trainees' progress.[6,7]

RISKS

TechnoServe, like most other nonprofits, had to mitigate risks that threaten to derail the impact of its intervention.

While TechnoServe could ensure that participants' business plans were financially realistic and that market research was conducted well, it could not ensure the commercial viability of participants' goods and services in the market. Were a product doomed to fail because the market was overcrowded with similar products, TechnoServe may not have been able to influence the businesswoman to completely change tack and develop a new product.

Though the program addressed the three biggest barriers that businesswomen face, it could not extricate its participants from operating in markets and cultures that systematically discriminate against women. For instance, banks in some regions require spousal consent for loans that use marital homes and land as collateral.[8] Since fewer women own land for many reasons, including discriminatory inheritance laws and customs,[9] they are very likely to have to rely on their marital homes as collateral. But a

woman may not want her husband to be aware of the loan lest he refuse or even demand the loaned funds from her — a plausible outcome given the common imbalance in power between the husband and wife in Uganda.[2] Even with a stellar track record and business plan, a businesswoman may still face systemic barriers.

Program Details

GEOGRAPHY

Women Mean Business took place in five urban areas in central Uganda: Entebbe, Kampala, Jinja, Mukono and Wakiso.[3]

STAGE

Women Mean Business reached the "scale" stage.[i] After pilot-testing the program in 2008, TechnoServe launched two consecutive phases of the program: one from 2009-11 and one from 2012-13. The two phases did not differ from each other in any substantial way except that the second phase accepted more than four times as many participants as did the first.[3] The second phase is the subject of this impact audit. It was also evaluated by a randomized controlled trial.

The Women Mean Business program reached the "scale" stage by the end of its first phase, when it had already tested and cemented the general design of the program, and then began to serve an expanded number of participants.

AGE AND SCALE

Women Mean Business was in operation for eight years. It trained over 800 businesswomen, including businesswomen from the pilot phase.[10] In the second phase, the subject of this impact audit, Women Mean Business trained 450 businesswomen.

[i] ImpactMatters classifies programs on a continuum from "design" stage to "validation" and "scale." At the design stage, the program is focused on discovering the right way to implement intervention. Programs at the "validation" stage are focused on testing that the intervention is cost-effective, before expanding access to the program. Programs at the "scale" stage are focused on expanding access to the program, to the extent warranted by its cost-effectiveness.

FUNDING

TechnoServe spent $1.3 million to deliver the second phase of Women Mean Business, or an annual average of $422,000 over its three years. This figure excludes the bulk of the costs TechnoServe incurred to participate in a randomized controlled trial by third-party evaluators I.P.A. By our calculations, it accounted for less than 1 percent of TechnoServe's total annual expenses over that time period.

IMPACT AND COST

WHY WE ESTIMATE

Impact audits estimate the philanthropic impact and cost of a nonprofit's programmatic interventions. We base those estimates on best available evidence, however imperfect, drawn from the auditee (internal evidence) and research literature (external evidence). As such, our estimates are the best possible evidence-based gauge of philanthropic success.

HOW WE ESTIMATE

First, we identify outcomes that best capture the auditee's mission. We then settle upon ways to measure progress against those outcomes, relying on the tools of modern social science.

Second, we report our estimate of "impact," the change in outcomes that can be attributed to the auditee's intervention over a designated period of time. We take explicit account of counterfactual success — the change in outcomes that would have occurred without the program. And whenever possible, we take explicit account of third-party effects, especially unintended harm to vulnerable individuals because of the auditee's intervention. For benefits that accrue over time — for example, the increased earnings from high school graduation — we discount these future benefits (at a 5 percent discount rate). The length of time over which benefits are assumed to accrue is based on the specifics of the intervention under review and available internal and external data.

Third, we report total costs. Total costs include marginal costs (direct costs of delivering the intervention) and fixed costs (for example, administrative overhead) regardless of who bears those costs (nonprofit, public agencies, private funders or participants). For programs that generate commercial revenue, the revenue is treated as a subtraction of costs. For costs that kick in over time, we discount (as we do benefits). The length of time over which costs accrue depends on the specifics of the intervention under review and available internal and external data.

Fourth, we report the ratio of impact to cost (a benefit/cost ratio).

Finally, we analyze key factors — for example, stage of development, whether the nonprofit be in pilot phase or expansion phase — relevant for understanding the audit findings.

Typically, impact is estimated on a single outcome. However, if an auditee's intervention affects several outcomes, we report impacts on distinct outcomes separately. Concretely, suppose that a program seeks to raise incomes and improve health status. We do not, as yet, attempt to combine the impact on multiple outcomes into a single aggregate outcome — concretely, by combining the value of the income effects and health-status effects. To aggregate, we would need weights — the relative value of outcomes — that would reflect the nonprofit's or funder's values (not those of ImpactMatters as auditor).

Findings

ImpactMatters measures the impact of Women Mean Business as the increase in profits of small and medium enterprises (S.M.E.s) owned by women in Uganda.

From the point of view of TechnoServe, ImpactMatters estimates that Women Mean Business boosted the profits of the average participating business by $1 for every $1 that TechnoServe spent on the program (a benefit/cost ratio of 1:1).[i] Each business earned an additional $2,600 in profits over a projected six years. Our estimates are based on a high quality randomized controlled trial (R.C.T.) conducted directly on the program, adjusted for the probability of business survival.[4] (The results from the R.C.T. have not yet been publicly disseminated. The figures we quote here are preliminary and subject to change in the final analysis.)

Taking instead the perspective of the women business owners, profits rose by $17 per business for every $1 that business owners invested in their businesses as a result of participating in the program. Finally, we take a societal perspective, counting all costs caused by the program, regardless of who bore them (TechnoServe, business owners or

[i] All figures are presented in 2016 U.S. dollars. Figures originally denominated in Ugandan shillings were converted at purchasing power parity.

other organizations that provided some training sessions pro bono). We find that profits rose by $1 for every $1 of total cost caused by the program.

Table 1. Impact and Cost Findings

Specification	Total
TOTAL BUSINESS OWNERS TRAINED DURING PROGRAM	450
INCREASE IN PROFITS PER BUSINESS (OVER SIX YEARS)	$2,600
BENEFIT/COST RATIO, COUNTING ONLY COSTS COVERED BY TECHNOSERVE	1:1
BENEFIT/COST RATIO, COUNTING ONLY COSTS COVERED BY BUSINESS OWNERS	17:1
BENEFIT/COST RATIO, COUNTING ALL COSTS, REGARDLESS OF PAYER	1:1

TechnoServe spent $2,800 per business owner (or per business) to deliver the program. That figure serves as the denominator in our first benefit/cost ratio, 1:1. A 1:1 benefit/cost ratio implies that the program broke even: TechnoServe's costs were recouped in the form of profits to businesses. But we think this ratio should be interpreted with care. The numerator might underestimate impact because we make a cautious assumption about how long participating businesses continue to earn higher profits than they would if they had not, contrary to fact, participated in Women Mean Business. The long-term effects of programs like Women Mean Business have not been studied, so we assume they last six years, or three more years after the end of the R.C.T. For this and other reasons, detailed below, we suspect the 1:1 benefit/cost ratio from the perspective of TechnoServe is lower than the true cost-effectiveness of the program and advise against drawing strong conclusions on its basis without considering the nuances of our calculation.

The cost incurred by each business owner to participate in the program was less than $160. This includes small fees paid to attend add-on activities such as trade fairs and the opportunity cost of business owners' time spent in training and meeting with coaches and mentors, about 56 hours. The $160 figure serves as the denominator in our second benefit/cost ratio of 17:1.

TechnoServe also outsourced certain training sessions to outside organizations, who provided them pro bono. We assign monetary value to those training sessions, but the total cost incurred by outside organizations is negligible at $1 per business owner.

If we combine in the denominator TechnoServe's costs, businesswomen's costs and costs to outside organizations to reach an estimate of total societal cost, the benefit/cost ratio is 1:1.

STRATEGY FOR ESTIMATING IMPACT

The centerpiece of our estimate of impact is a high quality R.C.T., conducted by third-party evaluator Innovations for Poverty Action (I.P.A.) on the Women Mean Business program. That trial tracked the monthly profits of all participating businesses at multiple intervals over a five-year span, two years of which were spent in the program and three of which came after the program had ended. The evaluators also tracked a control group of comparable businesses.

We borrow directly from the R.C.T., which found that after TechnoServe's intervention, the profits of businesses in the treatment group were 7 percent higher than those of the control group. The general trend in the profits of the treatment group was an immediate increase after the intervention, relative to the control group, that was sustained for a total of three years. The gap between the profits of the treatment and control groups showed no sign of diminishing (or growing) at the five-year mark. I.P.A. calculated the 7 percent figure as the average increase in profits, relative to the control group, across nine surveys conducted over three post-intervention years.

The Women Mean Business R.C.T. had high response rates, ranging from 81 percent to 93 percent and averaging 85 percent across all surveys. We consider the risk of non-response bias to be low, meaning non-respondents likely did not differ from respondents in ways that would influence their business performance. The evaluators also correctly accounted for the few businesses they knew had failed during the intervention period, assigning them zero profits and including them in the study sample. We find no reason to adjust the R.C.T. results for suspected bias and simply include them in our model as they are.

Finally, we assume that impacts completely terminate within eight years of the start of the program. After training commenced in 2012, participating firms earn higher profits in 2014 through 2016, when the R.C.T. concluded. Thereafter, we model a straight-line decline in profits to meet the level of non-participants in 2020.

It might be that businesses are permanently benefitted by the intervention. Non-participants might never catch up to participants and profits might never fade out to pre-

intervention levels. Or it might be that impacts drop to zero the very next day after the last R.C.T. survey. Either hypothesis is extreme and unlikely, so we have chosen a conservative time horizon in between them: impacts decline in a straight line over three years after the last survey measurement, falling to zero in 2020. Our choice is conservative in that, if wrong, it is more likely to underestimate rather than overestimate the true impact of the program. We acknowledge our choice is partially arbitrary, but we think it is a closer approximation of the truth than either of the two extremes described above.

CALCULATIONS

After the program ended in 2013, we estimate the average Women Mean Business firm earned about $700 more in annual profits in 2014 than it otherwise would have earned in the absence of the program. According to the R.C.T., this boost in profits lasted throughout the observation period, which ended in 2016. In other words, the annual profits of participating businesses remained $700 higher than those of control-group businesses in both 2015 and 2016. Adjusting for annual inflation, that $700 boost in profits was worth $620 and $560 in 2015 and 2016, respectively.

We assume impacts cease eight years after the program launched, meaning the profits of participating businesses fall to meet those of non-participants in 2020. We draw a straight line down from impact in 2016 ($560) to zero in 2020.

The result is a total of $2,600 in additional profits per business, earned over six years.

TechnoServe's cost to deliver the program to each business was $2,800, or $1.2 million in total program costs divided by the 450 businesswomen who participated.[i] The benefit/cost ratio from the point of view of TechnoServe takes $2,800 as the denominator, resulting in a ratio of 1:1. Said differently, the financial benefits to businesswomen just offset what TechnoServe spent on the program. While mediocre at first glance, we advise caution in interpreting the benefit/cost ratio. The numerator may be too low because of a series of conservative assumptions we make, detailed above. A supplementary analysis that varies the assumption about the duration of benefits is included in the annex of this report.

The second benefit/cost ratio, calculated from the point of view of the women entrepreneurs, takes as its denominator $160 in additional costs incurred by each female entrepreneur due to participation in the program. Some entrepreneurs paid fees to

[i] Our figures are presented in 2016 U.S. dollars and may therefore appear slightly different from TechnoServe's financials.

attend supplemental activities like trade exhibitions. They also incurred the opportunity cost of time spent in training, coaching and mentorship sessions, which amounted to about 56 hours each. Opportunity cost was calculated based on the take-home pay that the entrepreneurs reported in the R.C.T. The benefit/cost ratio is much higher when estimated from the perspective of businesswomen: 17:1.

Governmental agencies, such as the Uganda Revenue Authority, delivered pro bono trainings sessions on topics such as business taxes and licenses. We assign monetary value to these trainings based on the monthly salaries of officer-level government employees in Uganda, assuming each training session cost at least as much as it would cost to hire a single officer for a day.[11] The total cost incurred by these outside organizations is negligible at $600, or just over $1 per participating businesswoman.

If we count all costs caused by the program, including those paid by TechnoServe, business owners and outside organizations, the benefit/cost ratio remains 1:1.

Displacement and Other Effects

LEVEL OF WOMEN'S EMPOWERMENT

EFFECT: AMBIGUOUS

In Uganda as in many other countries, women face substantial disadvantages compared to men.[2] They lack economic independence and decision-making power. Many business accelerator programs directed at women aim to not only improve business performance to increase women's economic independence, but also to boost women's confidence. The R.C.T. surveyed all businesswomen who had participated in at least one Women Mean Business event and found that 83 percent felt "more confident in [her] personal abilities as an owner/manager."[4] 30 percent reported being better able to provide for their family and 34 percent thought their business was in a better financial position than before the program.

However, the direction of Women Mean Business' effect on women's empowerment is ultimately ambiguous. Program staff shared examples of husbands prohibiting their wives from attending training sessions or continually take money from the business if they had initially invested in it. Under such circumstances, business training can actually add to household conflict.[3] A recent R.C.T. on microenterprise assistance in Uganda measured the effect on intimate partner violence of offering a training program and stipend to businesswomen.[12] The authors found no change in the prevalence of abuse in the last

eight months, which remained at about 20 percent. Meanwhile, there was a small but statistically significant increase in men's control over women, largely driven by men making their wives give them money more frequently and against their will.

DISPLACEMENT

EFFECT: NONE

It is possible that a business that received training might take customers away from its competitors or even completely run its competitors out of business. Since the goal of Women Mean Business was to drive growth throughout the Ugandan economy, we ought to take an economy-wide view of displacement. If the growth of some firms comes entirely at the expense of others, economy-wide impacts might be much smaller or even zero.

The evidence that the program caused displacement is weak. Women Mean Business R.C.T. found that participating businesses in close geographic proximity tended to take customers from each other.[4] However, that result was small and not statistically significant. There was also no evidence of participating businesses putting other businesses out of operation altogether.

KNOWLEDGE SPILLOVERS

EFFECT: POSITIVE

Far from putting competitors out of business, a firm that received training might share its learnings with other business owners. Program staff gave anecdotal evidence of participants sharing their learnings with competitors.[3] For instance, after the program ended, TechnoServe asked 25 of the most active participants to provide mentorship to girls interested in entrepreneurship. All 25 agreed and, when surveyed, stated they would be willing to "pay it forward" by supporting another entrepreneur. Of course, the 25 "model" participants are not representative of all Women Mean Business participants. Indeed, the far more representative data from the R.C.T. do not show evidence of positive knowledge spillovers.

ECONOMIC GROWTH

EFFECT: POSITIVE

S.M.E.s account for a large portion of economic activity in developing countries.[13] Interventions to support S.M.E.s have the potential to affect job creation and economic growth considerably.

The available evidence is somewhat encouraging, but not conclusive. A recent systematic review found that in 11 out of 28 quasi-experimental and experimental tests, interventions targeted at microenterprises and S.M.E.s caused businesses to employ more people.[14] 17 tests did not yield statistically significant results. The Women Mean Business R.C.T. did not find any increases in the number of employees, hours of operation or the number of branches of each business.[4] However, the expansion of staff and business branches are “lumpy” costs, increasing in large increments. Such types of expansion might only be observable several years after the intervention.

QUALITY OF EVIDENCE

WHY WE RATE

Quality of evidence reflects our confidence in the impact and cost estimates. For programs with high quality evidence, the impact and cost estimates are more likely to accurately reflect the effectiveness of the program. Quality of evidence reflects only that data we used to construct the impact and cost estimate.

HOW WE RATE

Quality of evidence is rated using an adaptation of the GRADE methodology, a systematic approach to judging evidence. Initially, studies are ranked by whether they are observational, quasi-experimental or experimental. Then, each study is assessed against quality criteria: risk of bias, inconsistency of results, indirectness of evidence, imprecision, risk of publication bias, magnitude of effect, evidence of a dose-response relationship and attenuation bias.

In the ideal case, data from the program are solely used to estimate the impact of the program. However, external data can be used to identify quantitative and qualitative parameters or to link behavior change to outcomes. When the analysis is substantively based on data from multiple sources, the quality of each is assessed. If only very-low-quality internal data is available, high-quality external data may be substituted. In addition, external evidence can serve to confirm or contradict internal evidence.

Star Rating	Quality of Evidence
☆☆☆	Quality rating is “very low”; or
	Quality rating is “low” but high quality external evidence contradicts its findings
★☆☆	Quality rating is “low”; or
	Quality rating is “medium” but high quality external evidence contradicts its findings; or
	Quality rating is “very low” but high quality external evidence corroborates its findings

★★☆	Quality rating is “medium”; or
	Quality rating is “high” but high quality external evidence contradicts its findings; or
	Quality rating is “low” but high quality external evidence corroborates its findings
★★★	Quality rating is “high”; or
	Quality rating is “medium” but high quality external evidence corroborates its findings

Rating

★★★

From the point of view of TechnoServe, ImpactMatters estimates that Women Mean Business increased the profits of women-owned businesses in Uganda by $1 per business for every $1 that TechnoServe spent on the program. From the point of view of the women entrepreneurs, Women Mean Business increased profits by $17 per business for every $1 that the women entrepreneurs invested in their businesses because of Women Mean Business. Below, we conclude that these estimates are backed by high quality evidence.

Women Mean Business recently concluded a five-year randomized controlled trial (R.C.T.), social science’s most rigorous test of impact.[4] The R.C.T. found that Women Mean Business raised the profits of participating women entrepreneurs by 7 percent above those of firms randomly assigned to not participate. The impact did not fade five years after the start of the intervention. How long will benefits last thereafter? We cannot be sure. But given the absence of fade-out five years along, we assume, as a working hypothesis, profits of participating firms remain higher for another three years.

Review

RESULTS OF THE RANDOMIZED CONTROLLED TRIAL ON WOMEN MEAN BUSINESS

The impact of Women Mean Business has been validated by an R.C.T., the highest quality evidence in the social sciences.

In an R.C.T., researchers randomly assign members of a population to either a treatment group (which receives the intervention under review) or a control group (identical individuals who do not receive the intervention). The two groups are virtually identical before the intervention (at "baseline"). Any gap in performance that follows intervention and is likely not random "noise" can be safely attributed to the only factor that changes: the treatment itself. In this manner, R.C.T.s track outcomes of the control group to estimate counterfactual outcomes: what would outcomes have been for the treatment group had they, contrary to fact, not received treatment.

The Women Mean Business R.C.T., conducted by third-party evaluators, surveyed almost 1,300 businesswomen who were eligible for the program. Key eligibility criteria were that businesses were at least co-owned by women and earned annual revenues of at least 10 million Ugandan shillings. Of the 1,300 businesswomen identified, about 800 were randomly selected to participate in Women Mean Business and about 500 were assigned to the control group. The evaluators attempted to survey the complete sample of 1,300 businesswomen at multiple intervals from baseline (2012) to four years later (2016). They asked about business revenues, profits, business management practices and women's confidence in their management abilities. Survey response rates remained high throughout the survey period at an average of 85 percent.

The program suffered low attendance at events such as trainings and by the end of the program, only 450 of the 800 businesswomen originally invited to Women Mean Business had attended enough events to be considered a "graduate" of the program. Importantly, the participants who did not attend events were still regarded as members of the treatment group; their outcomes were included in reported measures for participants. R.C.T.s that include outcomes for participants who drop out as outcomes of the treatment group are known in the literature as "intent-to-treat" analysis. The researchers evaluate the impact of treatment on all participants whom the program intended to reach. Intent-to-treat analysis can be useful for funders and nonprofits concerned about the real effect of offering a program to many people, not all of whom can be expected to participate.

The R.C.T. found monthly profits rose by 7 percent after the intervention, relative to the level of profits among control-group businesses. The (positive) gap between the success of the treatment group and the success of the control group was sustained throughout the three post-intervention years of observation and showed no sign of slacking off. Said another way, the control group did not catch up to the treatment group after the program ceased to operate. However, the 7 percent increase in profits was not statistically significant,[i] meaning the evaluators could not reject that there was no difference between the profits of the treatment and control groups. Nonetheless, our confidence is bolstered because the treatment group also experienced an 18 percent increase in take-home pay, relative to that of the control group — a difference that was statistically significant. Take-home pay is a component of profit, so an increase in take-home pay likely signals an increase in profits as well.

QUALITY OF THE R.C.T. ON WOMEN MEAN BUSINESS

The R.C.T. was well-conceived and well-executed. We highlight two features of the research design that warrant special recognition. First, the evaluators conducted repeated, frequent follow-up surveys on both treatment and control groups over a long period, completing 10 rounds of surveys in total. The sales and expenses of the businesses surveyed tended to be very unstable and the quality of the records they kept could be unreliable. These factors would have made it difficult to discern trends had the evaluators not collected as much data. In addition, the high frequency follow-up surveys — quarterly and less often, by weekly text messaging — allowed the R.C.T. to pick up effects that change over time, including not only the seasonality of sales and expenses, but also whether and when participants eventually forgot what they had learned from TechnoServe. To avoid survey fatigue, the evaluators did not subject all 1,300 businesswomen to all 10 rounds each.

The second notable feature of the R.C.T. was its attention to spillover effects. The R.C.T. tested the impact of the program in similar-sized neighborhoods, some of which had a high proportion (75 percent) of eligible businesses that were invited to join the program and some of which had a low proportion (45 percent). This enabled the evaluators to test, for firms in the control group, whether firms in high concentration neighborhoods were more likely than firms in low concentration neighborhoods to pick up business practices endorsed by the program. The R.C.T. also tested if the intervention unintentionally harmed firms in the control group, as participating firms siphoned customers away from

[i] At the 99 percent, 95 percent or 10 percent confidence levels.

non-participating firms. The R.C.T. found little evidence to support either of these hypotheses.

Our biggest concern with the R.C.T. is that it might understate the impact of Women Mean Business on firms *that do fully participate in the intervention* (do not drop out of the intervention). The intent-to-treat methodology mixed together the outcomes of fully participating firms with dropouts, who made up about 57 percent of all firms that applied for the program. This methodology likely underestimated the impact of the intervention on full participants. The evaluators noted low take-up has, to date, been typical of training and consultancy interventions, which suggests firms tend to be overly optimistic when committing to the program at the outset.[15] Had the R.C.T. randomized into treatment and control groups only those firms that *demonstrated* interest in the program, such as by attending the first training session, the intervention may have generated higher outcomes than indicated by the intent-to-treat analysis. The data does not show the extent to which the R.C.T. underestimates impact on engaged participants, though such analysis could be conducted and would be very useful in better understanding programs with low take-up.

DURATION OF BENEFITS

The Women Mean Business R.C.T. found that increases in profits were maintained throughout the three years of post-intervention surveys, with no downward trend after the program ended and no spillover effects that might cause the control group to catch up.[4] In our literature search, we were unable to find studies with a longer follow-up horizon that would provide clues for how impacts might move over time. We conservatively assume, then, that the profits of treatment-group businesses remain at a higher level above those of control-group businesses for another three years.

COMPARISON TO THE RESEARCH LITERATURE

A recent R.C.T., referenced above, of a business-training program for female entrepreneurs found similar, statistically significant impacts on profits three years after baseline.[16] The R.C.T. tested the popular Gender and Entrepreneurship Together (GET) Ahead for Women in Enterprise program, developed by the International Labour Organization. Female entrepreneurs in Kenya were randomly assigned to receive the program, a five-day course followed by five months of twice-weekly mentorship sessions in a group and monthly mentorship sessions one-on-one with a mentor. Three years later, profits rose by 15 percent of the control group's average, higher than Women Mean Business' 7 percent. Like the Women Mean Business R.C.T., the Kenya study also found no evidence that treatment-group firms took business away from control-group firms.

We congratulate Women Mean Business for participating in what is one of the longest R.C.T.s of a business-training program for women. Of course, this also means that we are unable to check whether our assumptions about the duration of impacts are borne out in reality and cannot calibrate them accordingly.

ANNEX

Nonprofit Information

NAME	TechnoServe
CHARITABLE STATUS	501(c)3 nonprofit
WEBSITE	www.technoserve.org
CONTACT EMAIL	info@technoserve.org
ADDRESS	1120 19th Street NW, 8th Floor Washington, DC 20036

Audit Information

RELEASED	
PERMALINK	www.impactm.org/a/technoserve/1
STANDARD	Version 0.3
ACTIVITIES	Literature review, document and data review, senior management interviews, field staff interviews and key informant interviews.
AUDIT TEAM	Tamsin Chen and Ben Mazzotta
REVIEW TEAM	Elijah Goldberg and Michael Weinstein
CONFLICT DISCLOSURES	Dean Karlan, chairman of ImpactMatters' board, was one of the researchers on the Women Mean Business randomized controlled trial.

Alternate Approach to Analysis of Impact and Cost

We think the benefit/cost ratios presented in this impact audit might underestimate the true impact of Women Mean Business. When we lacked data, we made conservative analytical decisions. Here, we single out one such decisions and relax it, showing how our benefit/cost ratios change if we adopt instead a more generous assumption.

In the impact audit, we conservatively assumed the effects of Women Mean Business would wear off within eight years of the start of the program. Here, we make the more generous assumption that effects last 11 years, based on our prediction of business owners' continued adoption of best practices. According to the R.C.T., at the five-year mark, 62 percent of participants adopted best practices, a difference of 32 percentage points above the 30 percent adoption rate of non-participants.[i] In order to construct a trend, we assume participants, five years earlier, had a higher adoption rate than they did at year five. To calculate, we assume half of non-adopters at year five had adopted in the first year, leading to an estimated 81 percent of participants using best practices in the first year. We draw a line through 81 percent and 62 percent, creating a linear model that predicts adoption rates in subsequent years. Based on this trend, we assume impact is zero between year 11 and 12, at which time best practice adoption rates fall to the last observed level of the control group (30 percent).

The benefit/cost ratio, calculated from TechnoServe's perspective, improves somewhat: it rises from 0.9:1 to 1.4:1, a difference that disappears after rounding to one-digit precision. The benefit/cost ratio, calculated from the perspective of business owners, increases from 17:1 previously to 25:1 under the present generous assumption.

[i] Since developing a business plan was a major focus of the Women Mean Business training, we assume it represents businesswomen's adoption of best practices in general. The R.C.T. did not construct an index of best practice adoption.

Benchmarking Impact and Cost Estimates

ImpactMatters estimates that, taking the perspective of TechnoServe, Women Mean Business increased the profits of the average participating business by $1 for every $1 that TechnoServe spent on the program (a benefit/cost ratio of 1:1). Each business earned an additional $2,600 in profits over six years.

We can benchmark this benefit/cost estimate against the findings of another randomized controlled trial (R.C.T.) of a fairly similar female entrepreneurship program in Kenya.[16] The program, called Gender and Entrepreneurship Together (GET) Ahead for Women in Enterprise, was designed by the International Labour Organization and piloted in Thailand in 2001. It has since been implemented in at least 21 countries around the world, including in East African countries. The R.C.T. in Kenya assessed a version of GET Ahead that provided five days of training, for free, to women entrepreneurs over the course of six months. Following the training course, half of the women entrepreneurs were offered mentorship from a more experienced businesswoman, lasting five months.

For women assigned to the training course only, the R.C.T. found an increase in weekly profits of $2.60 at the three-year mark, relative to control-group businesses. We assume this is equivalent to a total of $406 in additional profits earned over the course of three years. The cost to generate that impact was $200 per businesswoman, resulting in a benefit/cost ratio of 2:1. The $200 figure includes costs to the program implementers of holding trainings and the travel stipends provided to participating businesswomen.

For women assigned to both the training course and mentorship component, weekly profits increased by $3.30 at the three-year mark, relative to control-group businesses.[i] We calculate this to be a total boost to profits of $515 earned over three years. The cost per businesswoman, at $753, was much higher than the training-only version of the intervention. Again, that figure only includes costs to the program implementers. We do not know whether mentors (and participants) were compensated for their time. The resulting benefit/cost ratio is 0.68:1, or simply 1:1 when rounded to single-digit precision.

[i] However, the authors of the study were unable to reject the conclusion that impacts were the same for the mentoring-plus-training version and the training-only version of GET Ahead.

Glossary

Bias

Bias is a non-random error in a statistical estimate. Whenever estimates are based on a sample from a larger population, there will be random error in that estimate: no two samples will produce exactly the same estimates. An estimate is biased when those errors lead it to be consistently above or below the true value that is being estimated.

Comparison Group; Control Group

A comparison group, in contrast to the treatment group, is a group that did not receive the intervention. Comparison groups enable nonprofits and researchers to compare what happened to participants of their program to what might have happened if they were not in the program. ImpactMatters refers to comparison groups as “control groups” if they were constructed using probabilistic sampling, meaning if control-group members were chosen at random from the same population as the treatment group.

Counterfactual; Counterfactual Evidence

The counterfactual is what would have happened in the absence of a program or other event. Understanding the counterfactual is essential to understanding the impact of a program. Participant outcomes may change over time for many different reasons not related to the program. By comparing the difference between participant outcomes and counterfactual outcomes, the impact of a program can be estimated.

The counterfactual cannot be directly measured, as researchers cannot observe the same participant both participating and not participating in the program. However, it can be approximated by randomizing participants into an intervention group and a control group, and then comparing outcomes across the two different groups.

Discount Rate

People tend to value benefits in the future less than benefits in the present, for three primary reasons. First, benefits today can be reinvested and generate some return. Second, the future is uncertain, and we are often uncertain if future benefits will actually materialize. Third, most people are impatient, and prefer immediate gratification over future gratification. A discount rate captures this by discounting or reducing future benefits compared to current benefits.

Effect Size

How large the measured impact was on outcomes in the group receiving the program compared to a similar group that did not receive the intervention.

GRADE

Grading of Recommendations Assessment, Development and Evaluation (GRADE) is an approach to rating the quality (or certainty) of evidence and strength of recommendations. ImpactMatters' assessments of quality of evidence are inspired by the GRADE approach.

Impact

Impact is a change in beneficiary outcomes attributable to a nonprofit's intervention, net of counterfactual effects.

Independent Evaluator

An independent evaluator can include a research organization or academics engaged to analyze the impact of a program. Independent evaluators are not directly employed by the program, although they may be paid through program resources.

Intervention

An intervention is what researchers study and nonprofits implement. An intervention includes anything from a medical procedure to a conditional cash grant. ImpactMatters studies the intervention that a nonprofit implements, mapping that intervention to the evidence base on that particular intervention. Also referred to as the nonprofit's program.

Purchasing Power Parity

The purchasing power of a currency is the quantity of the currency needed to purchase a common basket of consumer goods and services. P.P.P. equalizes the purchasing power of two given currencies by accounting for differences in the cost of living and inflation in the two countries.

Quality of Evidence

Quality of evidence captures ImpactMatters' confidence in our impact and cost estimates. For programs with high-quality evidence, the impact and cost estimates are more likely to accurately reflect the effectiveness of the program. Quality of evidence reflects only the data used to construct the impact and cost estimate. It is rated using an adaptation of the GRADE methodology, a systematic approach to judging evidence.

High-quality evidence under the GRADE rubric is the best scientific evidence that the program has its intended impact. Randomized designs are presumed to be in this category unless our analysts are concerned about flaws in the methodology or weak results.

Medium-quality evidence under the GRADE rubric has some flaws that might render estimates of impact inaccurate. Quasi-experimental designs are presumed to be in this category unless flaws are mitigated and results are convincing. Those designs can also be rated down to low quality if our analysts are concerned about the methodology or results.

Low-quality evidence under the GRADE rubric limits our confidence in the estimate of impact. Observational studies are presumed to be of low quality unless flaws are mitigated and the research shows very convincing results, such as with a large effect size and a clear dose-response curve.

Very-low-quality evidence under the GRADE rubric gives us very little confidence in the estimate of impact. Flawed observational studies, and even quasi-experimental or experimental studies with multiple, serious flaws, might fall into this category.

Quasi-experimental Design

A study with a quasi-experimental design tests a causal hypothesis, but lacks random assignment of test subjects to treatment and control groups, perhaps due to logistical or ethical constraints.

Randomized Controlled Trial (R.C.T.)

A randomized control trial is an evaluation design by which individuals (or groups) are randomly allocated into treatment and control groups, where the treatment group receives the program. The outcomes of the two groups are then compared in order to estimate effect size.

Sample; Sample Size

The sample is the portion drawn from a population for testing or analysis that is intended to enable statistical estimates of the behavior or attributes of the whole population. The sample size is the number of units that comprise the sample; a large enough sample size allows inferences about the whole population to be made.

Social Costs or Societal Costs

Social costs include all costs incurred by society as a result of the nonprofit's program. Different from accounting costs, which include just the costs that appear on the

nonprofit's accounting statements, social costs may include, for instance, the opportunity costs of participants' time spent in the program and the costs to other organizations and governments of helping to delivering the program.

Statistical Power

Statistical power is the probability that a test will correctly reject the null hypothesis (the hypothesis that there is no statistically significant difference between the samples being compared). An underpowered test will likely yield large p-values and confidence intervals, and will lack the evidence to reject the null hypothesis.

Statistical Significance

A statistically significant result (often a difference of means of the main outcome of interest) is a result that is unlikely to arise as a result of chance. This doesn’t mean the finding cannot be due to chance – just that it is very unlikely.

Systematic Review

A type of literature review that collects and analyzes multiple research studies in order to answer a research question. After a research question is defined and appropriate research studies identified, data from the studies are extracted, assessed for their quality, analyzed, sometimes statistically combined in meta-analyses, and reported in such a way as to address the research question.

Theory of Change

A theory of change connects the problem to the intervention the nonprofit runs to expected process and outcome metrics. The objective of a theory of change is to provide a testable hypothesis for why the intervention is solving some problem that will lead to positive changes for the targeted beneficiaries.

Treatment Group

In an experiment, the treatment group is comprised of experimental subjects that receive the treatment being evaluated.

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