Breaking the Chains of Poverty: Evaluating Poverty Stoplight Using Qualitative Insights

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Abstract

Background: Global poverty is a complex global issue targeted by the Sustainable Development Goals (SDGs) 2030, which aims to eradicate extreme poverty. This study evaluates Poverty Stoplight, a program collaborating with local nonprofits, which differs from income-focused approaches by benchmarking against various SDG indicators, offering actionable targets for anti-poverty initiatives.

Methods: Using COM-B and SDOH theories alongside PRISM/RE-AIM frameworks, we crafted interview and survey questions. Participants from the U.S., Paraguay, Panama, Guatemala, Columbia, Ecuador, Bolivia, El Salvador, Uruguay, Brazil, Philippines, and England were recruited via email for semi-structured Zoom interviews, including organizational leaders and end-users. Additionally, Poverty Stoplight employees completed an 18-question Google Forms survey. Interview transcripts were coded line by line, with themes organized into six categories using MAXQDA: capabilities, opportunities, motivations, reach, effectiveness, adoption, implementation and maintenance.

Results: The study involved 33 organizational directors, 16 end-user organizational clients, and 29 Poverty Stoplight employees. Stakeholders expressed confidence in Poverty Stoplight's potential but identified challenges such as the need for ongoing training in follow-up methodology, survey-related time constraints, data integrity issues, and the necessity for a comprehensive Solutions Bank.

Discussion: Evaluation of Poverty Stoplight interventions revealed key factors impacting follow-up rates, including organizational commitment and communication effectiveness. Despite challenges, participant motivation drove transformative changes, reshaping societal perspectives on poverty alleviation. However, persistent obstacles like training insufficiency and data quality

concerns remain. Ongoing training and technological improvements can address these challenges, empowering providers and informing evidence-based policy decisions for sustainable change.

Keywords: Sustainable Development Goals, multidimensional poverty index (MPI), Poverty Stoplight, COM-B theory, Social Determinants of Health (SDOH), PRISM/RE-AIM frameworks

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In a world dedicated to global progress and sustainability, the paramount objective is eradicating poverty, exemplified by the Sustainable Development Goals (SDGs). The evolution of poverty measurement, from rudimentary approaches to multidimensional paradigms, underscores the importance of assessing poverty comprehensively beyond mere income levels. However, the challenge lies in selecting the most suitable indicators for organizations and populations to gain a nuanced understanding of poverty's multifaceted nature. To address this challenge, a comprehensive literature review was conducted, exploring multidimensional indices, associated indicators, and potential policy adaptations to aid anti-poverty programs in advancing poverty eradication, with a focus on health, education, and standard of living indicators.

Fundación Paraguaya, a distinguished nonprofit established in 1985, has played a pivotal role in poverty alleviation and entrepreneurship development through the development of the Poverty Stoplight, poverty assessment tool. Yet, challenges persist in achieving optimal follow-up on participants' progress. An evaluation project is underway, employing a semi-structured interview process to enhance the follow-up methodology. By engaging with a representative sample of Fundación Paraguaya's affiliates and exploring their perspectives, intervention efficacy, obstacles, and recommendations for methodology enhancements, this initiative aims to empower both Fundación Paraguaya and their partners in the relentless fight against poverty, thereby contributing to global poverty eradication efforts.

Background and Significance

Problem

The problem addressed in this study is the persistent and pervasive challenge of poverty on a global scale. In 1992, the United Nations, in collaboration with various committees, initiated

a monumental effort to establish a comprehensive plan for global sustainable development, leading to the creation of the Sustainable Development Goals (SDGs) (United Nations, 2022). Poverty reduction was designated the top priority among these goals, reflecting the urgent need to address this pressing issue. The magnitude of the problem is evident, as reported by The World Bank's Poverty and Inequality Platform (PIP) (2022), with 648 million individuals living below the poverty threshold of $2.15 per day in 2019. Also, the Multidimensional Poverty Index (MPI) 2020 report includes poverty levels for 107 developing countries, and 22% are identified as multidimensionally poor (Alkire, 2021).

Furthermore, the impoverished face increased risks of health complications and diminished quality of life compared to their more affluent counterparts. Current research reinforces the multidimensional challenge concept, prompting the MPI's development (Oxford Poverty & Human Development Initiative, 2022). Despite the efforts and strategies employed, poverty remains an enduring and complex pandemic, necessitating a collective, communal, and innovative approach to eradicate it. While some progress has been made, the task is far from futile.

Affected Population

This study centers on impoverished populations across various countries globally. Poverty is typically measured by each country's government, with the international poverty line currently set at an income of $1.90 per day (Peer, 2021). Impoverished children often face barriers to accessing quality education due to their geographical location or the limited financial resources available from their parents. Consequently, these children become trapped in the cycle of poverty, unable to break free and improve their socioeconomic status. Living in poverty is a multifaceted and pervasive determinant of health that creates numerous challenges with

substantial impacts on healthcare access and outcomes, ultimately leading to increased illness and premature mortality (Peer, 2021). Unfortunately, these challenges transcend borders, and the World Bank (2022) predicted that by the end of 2022, approximately 685 million people would be living in extreme poverty, with Sub-Saharan Africa and rural areas experiencing the highest levels of impoverishment.

Purpose and Rationale

The purpose of this study is to comprehensively investigate the impact of anti-poverty programs, with a particular focus on the Poverty Stoplight initiative centered around the Sustainable Development Goals (SDGs), compared to programs primarily based on income indicators. This study aims to contribute valuable insights into the strategies and methodologies employed to combat poverty, emphasizing enhancing client engagement in follow-up surveys to measure changes in poverty indicators. By delving into the multifaceted nature of poverty and assessing the effectiveness of various approaches, this study seeks to inform policy adaptations and program enhancements, thereby contributing to the global pursuit of poverty eradication and sustainable development.

Poverty represents a significant global challenge with profound implications for the health and well-being of individuals. Those trapped in the cycle of poverty often face elevated risks of health complications and endure a lower quality of life when compared to their more economically fortunate counterparts. Historically, assessments like those pioneered by professionals such as Mollie Orshansky (Fisher, 2008) were instrumental in understanding the plight of this demographic. However, contemporary research increasingly supports the application of the MPI, a comprehensive tool that assesses economic and health-related dimensions (Oxford Poverty & Human Development Initiative, 2022). The MPI provides a more

nuanced and holistic perspective on poverty, offering individuals the means to engage in self-assessment and gain a deeper understanding of the multifaceted nature of poverty.

Fundación Paraguaya is currently in 58 countries, assisting hundreds of organizations, universities, and governments to assess and address their poverty. Central to their mission is providing financial and technical support to individuals and small businesses and monitoring and evaluating their efforts' progress and impact, which involves both baseline and follow-up surveys. However, the organization has faced challenges in monitoring and evaluating the progress and impact of their interventions, including desirable follow-up survey completion rates, which hinders their ability to track the status and advancement of their partners. Additionally, this lack of follow-up impedes partners' communication of their concerns and needs regarding poverty alleviation.

Interventions

To address and reduce health inequities, it is crucial to implement tangible steps. One essential step is developing an awareness of and sensitivity to individual circumstances. This process was initiated in 1965 when an analyst for the Federal Government established the first official poverty measure by determining food budget costs, which became the poverty threshold. The Consumer Price Index (CPI-U) was introduced to account for inflation. These steps aid in estimating poverty using the Current Population Survey Annual Social and Economic Supplement (CPS ASEC), conducted from February to April, with an annual sample size of approximately 100,000 addresses (Board of Regents of the University of Wisconsin System, 2023).

The United States Census Bureau also relies on the American Community Survey (ACS) to assess various factors such as employment, education, housing status, and more (United States

Census Bureau, 2022). The United Nations Development Program's flagship Human Development Report (UNDP HDR), introduced in 1997, introduced the Human Poverty Index (HPI) to measure deficiencies in human development. However, this generic index does not apply to specific population groups. It is recognized that poverty assessment extends beyond income alone and the efficient and comprehensive measurement of multidimensional poverty indicators (Firdausy & Budisetyowati, 2022; Alkire & Yingfeng, 2019).

Comparison

Organizations such as the United Nations and The World Bank have adopted approaches akin to those of Poverty Stoplight in their poverty measurement efforts. They have a multidimensional perspective, informed by evidence-based research, employing comprehensive indicators encompassing diverse health dimensions (United Nations Development Program and Oxford Poverty and Human Development Initiative, 2022; World Health Organization, 2018). These organizations play a crucial role in identifying individuals facing relative disadvantages on a global scale. The United Nations Department of Economic and Social Affairs (UNDESA) has established the Sustainable Development Goals (SDGs), featuring 50 indicators spanning areas such as water, energy, climate, and urbanization (Department of Economic and Social Affairs Sustainable Development, 2022). However, the analysis by Ram (2021) indicates that the current rate of poverty reduction in 34 examined countries is insufficient to meet the SDGs' ambitious target of halving poverty by 50% in these nations within 15 years, underscoring the need for more effective anti-poverty programs. Additionally, a broader concept of health has emerged among professionals, emphasizing factors contributing to a high quality of life (HQOL) beyond income (Li et al., 2022). For instance, the Stiglitz-Sen-Fitoussi Commission incorporates

subjective and objective assessments to comprehensively gauge HQOL or an individual's poverty level (Stiglitz et al., n.d.; Haveman, 2009).

In addressing the limitations of the Human Poverty Index (HPI), Sabina Alkire and Maria Emma Santos introduced the MPI (Oxford Poverty & Human Development Initiative, 2022). The global MPI is an internationally comparable measure of acute poverty in over 100 countries. It captures associated deprivations experienced by individuals within their households across ten indicators in three key dimensions: health, education, and living standards (United Nations Development Program, 2019; Dirksen, 2020). This tool is in line with the SDGs and included these goals for the first time as a tool to support and monitor the Third U.N. Decade agenda – in three ways: The pledge to end poverty in all its forms, recognizing multidimensional factors, and seeks to assess reductions in multidimensional poverty. Alkire (2021) said, "Ending poverty is not just about people's income but also their access to basic needs, such as quality education and health care, clean water and sanitation, decent housing and security." The Alkire-Foster method (2011), currently the most widely used method for multidimensional poverty measures, underpins the construction of this index. Dr. Martin Burt, a globally recognized social entrepreneur, concurs with this approach, emphasizing the need for region-specific, tailored poverty indices (Burt, 2019).

Internal Data

Fundación Paraguaya's Poverty Stoplight, founded on the principles of the SDGs, represents a remarkable self-evaluation tool with the capacity to discern global challenges and participant deprivations. Through an array of 50 carefully selected poverty indicators spanning six dimensions, the organization empowers individuals to evaluate their poverty status. This assessment functions as a metric and a methodology, equipping families with the tools to assess

their poverty levels and employ personalized strategies for overcoming their deficits. Our internal data indicates that participants find the survey engaging, marking a difference from similar programs, as they express feelings of being heard empowered, and gaining valuable insights into systematic thinking about their lives. Regarding efficiency, each survey application demands roughly 40 minutes for the baseline assessment, complemented by subsequent follow-up and mentoring sessions (Hammler, 2020).

Also, the findings from an internal mid-term evaluation conducted in 2018 are encouraging, revealing an average 6% increase in "green" indicators for 626 families with data available from two survey cycles (Hammler, 2020). Stakeholders, including individuals, countries, organizations, and private enterprises, invest in this assessment to precisely understand their target population's needs. It serves as a critical tool for resource allocation, ensuring that focus, time, and resources are channeled effectively. The internal data unequivocally demonstrates the effectiveness of this assessment in helping individuals escape the clutches of poverty. However, a recent revelation presents a substantial challenge, with 1,001 organizations partnered with Fundación Paraguaya, 476,473 Poverty Stoplight assessments currently registered, 327,641 families within the organization, and 1,911,844 individuals using this tool as their vehicle to overcome poverty, a mere 13% on average complete a follow-up assessment (Fundación Paraguaya, 2023). This leaves 87% without subsequent engagement. This raises a pressing concern for the leadership, urging an exploration of the underlying factors contributing to this issue and formulating strategies to bridge the gap and achieve a minimum follow-up rate of 80%.

PICOT Question

A review of the literature led to the clinically relevant PICOT question: For impoverished individuals in vulnerable populations (P), how do anti-poverty initiatives/programs centered around the Sustainable Development Goals (SDGs) (I) compared to programs centered around income indicators (C) improve the outcome of breaking the poverty cycle (O)?

Evidence Synthesis

Search Strategy

A comprehensive review of the latest evidence was conducted to address the PICOT question. Extensive searches were performed on four key databases: EBSCO essentials, PubMed, PsychINFO, and CINHAHL. These databases were chosen due to their relevance in multidimensional indices to evaluate poverty in the context of the SDGs. Additionally, they are renowned for their extensive collection of diverse articles that significantly contribute to global health.

Keyword Selection

The databases were searched using combinations of the key terms and the Boolean connector "and," which addressed all aspects of the PICOT question. These included: "*Sustainable Development Goals*," *anti-poverty multidimensional poverty index, uni-dimensional income, poverty index, America, USA, Alkire-Foster Method, Poverty Stoplight, COM-B theory, Social Determinants of Health (SDOH), PRISM-REAIM frameworks, follow-up methodology.*

Initial and Final Search Yields

An initial search of ESBCO essentials using key terms, *sustainable development goals*, *AND focused anti-poverty programs* yielded 773 results. For PubMed, the multidimensional *poverty index* yielded 172 results. The initial search of PsychINFO included key terms, such as

impoverished, multidimensional, evidence-based, well-being, and United States well-being indicators, which yielded 1,617 results. The search terms were changed to *assess, correct, scientific, and poverty* with the Boolean term "and," which produced 298 results. Finally, the CINHAHL search included *impoverished "or" poor multidimensional, evidence-based, well-being, United States, well-being indicators,* which yielded 433 results. Grey literature of government publications from the World Health Organization and the Centers for Disease Control were also searched.

Limitations, Inclusion, and Exclusion Criteria

Reviewing the titles and abstracts of the articles identified in these database searches yielded 49 relevant studies. Additionally, the reference lists of these articles were scanned to identify three other essential studies for a total of 52 relevant studies. Rapid critical appraisal checklists narrowed the article pool to the ten most relevant and highest-quality studies. These included four qualitative studies, one observational study, two systematic reviews, one mixed-method study, one longitudinal study, and one randomized controlled trial.

Inclusion and exclusion criteria were the same for all databases and included interventions and multidimensional anti-poverty programs constructed around the SDGs. Exclusion filters included date of publication (2017-2023), English language, peer-reviewed, and primary research journal articles. An exception to these criteria is the Alkire and Foster methodology published in 2011, which is the foundation of several research studies referenced in this paper (Alkire & Foster, 2011).

Critical Appraisal and Synthesis of Evidence

To establish reliable and applicable evidence, rapid critical appraisal (RCA) tools (Melnyk & Fineout-Overholt, 2019) provided the framework for determining the articles utilized

in this paper. The selected articles include quantitative studies (see Appendix A, Table A1) and qualitative studies (see Appendix A, Table A2). They are evaluated and synthesized into a synthesis table (see Appendix A, Table A3) to thoroughly explain effective indices used in different countries to capture an individual's poverty level best. The eventual goal is to help these individuals rise out of poverty.

The subjects in this study range from children to older adults and include varying demographics, with most studies conducted through nationwide surveys. The location comprises various US, Asia, and the Middle East countries. The majority had large sample sizes that ranged from 1,000 to 128,000 participants. Ten studies reported that multidimensional poverty indices (MDP) are more impactful in addressing poverty than income-based poverty lines. Each article indicated that policy changes multidimensional factors for possible poverty eradication (Singh & R, 2021; Roelen & Leon Himmelstine, 2019). Eight studies used the MPI to quantify the poverty level in their country of interest. In addition to the MPI, one study also utilized the Official Poverty Measure (OPM) and the Supplemental Poverty Measure (SPM) (Dhongde & Dong, 2022). This paper includes mixed Measurement tools. The significant difference between the studies was the specific indicators used to quantify poverty.

Evidence and Influence

The multifaceted nature of poverty, influenced by cultural and geographical variations, necessitates adaptable strategies to address it effectively. Poverty encompasses diverse dimensions, including physical, mental, social, financial, and environmental aspects, which collectively impact an individual's or a country's overall well-being. The SDGs have a framework that can guide governments, organizations, and individuals when assessing poverty. A practical approach begins with surveys to understand the specific dimensions of poverty

within a given area. Subsequently, identifying appropriate indicators, such as education, housing, security, and access to healthcare, tailored to the feedback enables the establishment of a region-specific poverty threshold. This customized MPI can then be employed to accurately quantify the extent of poverty within the population, thus pinpointing areas that require intervention.

Due to the sound evidence representing the MPI's efficacy, the Poverty Stoplight created around this tool and influenced by the SDG indicators is based on sound theory and framework. Therefore, the low rates of follow-up surveys must be influenced by unknown external factors. The investigation of the external factors that could be influencing participants behavior implementing the follow-up survey is the driving force for this evaluation project.

Theoretical Framework and Implementation Framework

Theory Application

Integrating the Capability-Opportunity-Motivation-Behavior (COM-B) model with the Social Determinants of Health (SDOH) framework offers a comprehensive theoretical foundation for understanding participant behavior in the context of the follow-up methodology. The COM-B model, structured around capabilities, opportunities, and motivations, provides a structured lens to grasp why participants may embrace or resist the methodology (see Appendix B, Figure B1). Simultaneously, the SDOH theory, nested within the "Opportunity" component of the COM-B model, underscores the importance of external factors influencing behavior and creating opportunities or barriers (see Appendix B, Figure B2).

The COM-B model provides a comprehensive framework for understanding behavior change, emphasizing the relationship of capability, opportunity, and motivation. Capability relates to an individual's mental and physical capacity to engage in a behavior, while opportunity encompasses external factors facilitating behavior execution. Motivation explores the cognitive

processes driving behavior, including reflective planning and automatic impulses. Interventions targeting these components can effectively induce behavior change, such as implementing training sessions to enhance capability or offering free classes to improve opportunity. Motivation can be strengthened by encouraging reflection on the benefits of desired behaviors, shifting behaviors from necessity to choice. The COM-B model has been instrumental in various fields, including public health, cancer care, stroke rehabilitation, and energy adoption initiatives (McCutchan et al., 2016; Connell et al., 2016; Thompson et al., 2018).

Similarly, the SDOH theory has been used to analyze environmental factors affecting individuals adopting interventions. Dean et al. (2013) incorporated the social determinants of health (SDH) into prevention programming. Through a qualitative study, researchers interviewed participants to understand the dynamic interaction among health's behavioral, clinical, policy, systems, occupational, and environmental determinants. The SDOH perspective explores social factors like income, education, occupation, and social support networks and their impact on participant engagement. It also addresses economic determinants, considering income levels and financial stability. Environmental factors are analyzed, encompassing the physical environment and its influence on participation. Health inequities and cultural norms are explored to understand disparities and cultural influences. Additionally, policy implications are considered concerning broader societal policies and structures impacting the methodology's implementation.

These theories guided the formulation of interview questions to assess participants' capabilities, opportunities (including external factors), and motivations related to the follow-up methodology. They ensured that the questions had a clear purpose and direction. These theories provided a strong foundation for understanding participant behavior and engagement with the follow-up methodology. In addition, this framework was used in the thematic analysis.

Implementation Framework Application

The PRISM/RE-AIM implementation and evaluation frameworks offer a systematic and comprehensive approach to guide the implementation of interventions or programs, particularly in complex settings. Developed by Feldstein et al. (2008), PRISM, standing for Practical, Robust Implementation and Sustainability Model focuses on practical considerations such as identifying key stakeholders, developing effective implementation strategies, and evaluating intervention outcomes (see Appendix B, Figure B3). Conversely, RE-AIM, encompassing Reach, Effectiveness, Adoption, Implementation, and Maintenance, centers on the evaluation of interventions by assessing various dimensions, including the reach, real-world effectiveness, adoption and implementation by stakeholders, and the sustainability of outcomes over time (see Appendix B, Figure B4).

In the context of online interviews with Fundación Paraguaya's international partners, families, and employees, the choice of the PRISM/RE-AIM implementation frameworks were justified by the need to enhance the follow-up survey outcomes. These frameworks provided a comprehensive approach to address the complexities of implementing the interviews in an online setting. PRISM offered practical guidance to identify and engage key stakeholders, develop effective strategies for conducting the interviews, and ensure the sustainability of the follow-up survey process. The PRISM framework was used to incorporate multiple levels of internal and external stakeholders in the data collection, interviewing leadership, employees, partners, and end-user clients. Metrics for stakeholder engagement included the number of partners involved, their active participation in the interview process, and the quality of their feedback. The PRISM framework guided the monitoring and evaluation of the implementation process, allowing for ongoing adjustments and improvements. RE-AIM, on the other hand, facilitated the evaluation of

the intervention. For reach, metrics included the percentage of partners approached who agreed to participate, demographic characteristics of participants, and overall sample representativeness. In addition, to gauge the effectiveness and adoption of the follow-up methodology, the quality and relevance of data collected were evaluated, along with insights and improvements from the interviews and overall impact on outcomes. The implementation progress involved tracking the barrier to implementation and why individuals did or did not participate in the interviews.

Finally, for sustainability and maintenance of the quality evaluation study of the follow-up process, partners committed to implementing suggested interventions to the follow-up methodology and conduct annual quality improvement initiatives. The team adopted a rigorous approach to evaluating the feasibility, benefits, and potential risks associated with the proposed interventions.

In summary, these frameworks provided guidance in the selection of appropriate communication channels, creation of clear interview questions, thematic analysis. By following these frameworks, the project had a systematic and evidence-based approach to improving the follow-up survey outcomes and driving long-term impact.

Methods

Ethical Considerations

Ethical considerations in the project encompassed various facets, including informed consent, confidentiality, data security, voluntary participation, cultural sensitivity, beneficence, non-maleficence, and ethical review and approval. Informed consent was diligently obtained from all participants engaging in partner interviews. It entailed transparent communication regarding the interview's purpose, voluntary nature, potential risks, benefits, and data usage. Participants retained the right to decline or withdraw from the interviews without repercussions.

In addition, to safeguard participants' confidentiality and anonymity, data was de-identified when reporting findings, upholding privacy and minimizing potential harm. The de-identified data is securely stored in Google Drive for three years and shared with Fundación Paraguaya as consented by the participant. Respect for participants' cultural norms, beliefs, and practices is paramount. Language-appropriate documents were provided, and all communication was devoid of offensive or discriminatory elements.

Also, the well-being and safety of participants remained a top priority throughout the project. Contact information was supplied, enabling participants to address any issues or concerns arising during or after the interviews, thus mitigating potential discomfort. Finally, the project underwent rigorous review and approval by ASU's Institutional Review Board (IRB) to ensure compliance with ethical standards and regulations governing research involving human participants.

Participants and Setting

The study was comprised of partnered organizations, families, and employees who were currently involved with Poverty Stoplight follow-up surveys. In addition, the study criteria encompassed Fundación Paraguaya partners and families who implemented the baseline survey at least one year prior, providing sufficient time to begin their follow-up survey cycle.

Eligible individuals were aged 18 and above, with neither specific inclusion nor exclusion of economically or educationally disadvantaged individuals to safeguard vulnerable populations. Recruitment occurred online, initiated through email by Fundación Paraguaya's program officers to their organizational liaisons. The liaisons were invited to participate in Zoom interviews with the program officers and a graduate student, focusing on exploring perceptions, impact, obstacles, and suggestions concerning the current follow-up survey methodology and

interventions. Organizational leaders then selected an active family using the Poverty Stoplight tool and invited them to participate in a recorded Zoom interview. Upon acceptance, participants received an email containing a consent form, interview questions, and interview scheduling details. Informed consent specified the utilization of responses for Fundación Paraguaya's quality improvement and underscored the participant's right to choose their involvement.

The project operated within a technological communication setting, considering participants in various states and countries. Stakeholders encompassed Fundación Paraguaya's leadership, partnered organizations, and Poverty Stoplight end-users. Fundación Paraguaya's leadership team provided insights into Poverty Stoplight, including the CEO, research consultants, and methodology team members. They regard this project as central to its organizational mission, which is to help families overcome poverty.

Project Intervention and Timeline

This intervention marks the initial phase of a comprehensive, evidence-based project to enhance follow-up survey rates within Fundacion Paraguaya. The first step in this project is to gather perspectives and insights from key stakeholders, including Fundacion Paraguaya employees, organizational leaders partnered with the foundation, and program-involved families. As advocated by the PRISM framework, understanding the organization's and its participants' perspectives is paramount to initiating effective interventions (Feldstein & Glasgow, 2008). While evaluations may not be traditionally viewed as interventions, this qualitative evaluation of the follow-up process lays the groundwork for implementing transformative changes. Although it may deviate from conventional expectations of evidence-based practice projects, this evaluation equips Fundacion Paraguaya with robust internal data necessary for informed decision-making and future interventions. As such, this intervention serves as the foundational step towards a

long-term evidence-based practice initiative, setting the stage for implementing and evaluating enhanced follow-up practices in the future.

The project commenced with a comprehensive preparation phase, spanning approximately two weeks. This phase incorporated a diligent literature review on follow-up survey methodologies in similar contexts and the critical task of engaging stakeholders, encompassing Fundación Paraguaya staff and participants. Subsequently, the planning phase, lasting about one week, involved meticulously developing a research plan. Within this plan, research questions, objectives, and the study design were precisely outlined. The existing follow-up survey methodology was assessed to identify areas for improvement.

Next, this pivotal phase crossed over six months and involved the implementation of *Intervention One* - the evaluation of the follow-up survey methodology. This intervention, executed by a collaborative team comprising the graduate student, Fundación Paraguaya's director, program officers, and methodology team members, was conducted in Fundación Paraguaya's office and via Google chat video calls. Importantly, this intervention was an ongoing process throughout the project. Data collection included documenting the existing follow-up survey methodology and identifying areas for enhancement through analyzing survey instruments, data collection protocols, and stakeholder feedback.

Intervention Two included selecting active partnered organizations that have been active for at least one year, providing sufficient time to administer a follow-up survey to their end-users. Participants were recruited via email, sent by their assigned program officer. The interviewee accepted the invitation by replying to the email. Upon acceptance, participants received a consent form in their preferred language, interview questions tailored to their language preference, and a link to schedule a Zoom video call.

Intervention Three included chosen organizations to select 1-2 active families utilizing the Poverty Stoplight for at least one year through their company. These families were emailed to the organization's director, accepted by replying to the email, and the consent form and the interview questions were sent to prepare for our meeting.

Intervention Four encompassed gathering demographic information before these interviews. A sample matrix survey, administered through the Google Forms platform, collected participants' data on gender, profession, age, nationality, and associated organization. This survey aimed to ensure a diverse and unbiased sample for more generalized and objective results.

Data Collection Plan, Instruments, and Outcome Measures

The data collection plan for this study included *Interview One*, conducted by the graduate student and methodology team members. This involved completing an 18-question, structured free-response, survey through Google Forms with Fundación Paraguaya employees to gather their perspectives on the follow-up survey methodology, assessing its strengths, weaknesses, and potential improvements. A semi-structured interview or survey guide provides a framework while allowing open-ended responses.

Next, *Interview Two* involved semi-structured interviews with leaders of partnered organizations in the U.S., Paraguay, Panama, Guatemala, Columbia, Ecuador, Bolivia, El Salvador, Uruguay, Brazil, Philippines, and England. The guide aligns with the project's goals, is validated through pilot testing and expert review, and is designed for high validity and reliability when administered by an experienced interviewer (Santos et al., 2021; Mashuri et al., 2022). These 60-minute interviews were hosted and recorded on Zoom, either in the participant's home or the local organization's office. Each interview included the graduate student, the program officer/translator, and the organization's representative. Each participant verbally consented to

the interview at the beginning of the meeting. The interviews were transcribed using Zoom's audio transcription feature. These discussions aimed to evaluate experiences with the follow-up survey, challenges faced, and suggestions for improvement.

Interview Three involved conducting similar interviews with adults from families utilizing the Poverty Stoplight tool. These interviews, conducted by the project team via Zoom video calls, aimed to assess experiences with the follow-up survey, challenges faced, and suggestions for improvement.

Data Analysis Plan

The analysis phase spanned over three months. After recording the interviews, the graduate students, and qualified researchers from Fundación Paraguaya's methodology team, downloaded each transcript created using the Zoom recording audio feature. Those transcripts were edited and transcribed into English if the original transcript was recorded in Spanish. These edited transcripts were then uploaded into the MAXQDA software for line-by-line qualitative analysis. This software is essential for identifying recurrent themes concerning obstacles, concerns, and suggestions offered by clients (All-in-One Thematic Analysis Software, n.d.). The written survey results and Zoom interview transcriptions were coded inductively into the following categories: capabilities, opportunities, motivations, reach, effectiveness, adoption, implementation, and maintenance.

Budget, Funding Received, Synthesis Tables

The budget for this project can be found in Appendix C, Figure C1. This project has no funding sources. The partnerships within Fundación Paraguaya provided donated time. The evaluation and synthesis tables for research can be found in Appendix B, Table B1, and Table B2.

Results

Participants who met the inclusion requirements were a total of 16 individual family members, 31 organizational leaders, and 13 of the Foundation's employees. Families and organizations represented 10 countries: the U.S., Paraguay, Panama, Guatemala, Columbia, Ecuador, Bolivia, El Salvador, Uruguay, Brazil, Philippines, and England virtually. Participants were excluded if they had not participated in Fundacion Paraguaya for at least one year, giving them the opportunity to take a follow-up survey. See the demographic information for families (*Table 1)* and organizations (*Table* 2) in the following tables. The demographic information for employees was not gathered.

Table 1: Demographic Information for Family Interviewees

Demographic Indicator	Families (*n*=16)
Age	
18-59 years	87.5%
60+ years	12.5%
Gender	
Female	100%
Household	
1-4	37.5%
5+	62.5%
Education	
<Elementary	37.5%
High School	37.5%
College	12.5%
Other	12.5%
Race and Ethnicity	
Hispanic	62.5%
White	12.5%
Asian	12.5%
Other	12.5%
Residence	
Urban	62.5%
Semi-Urban	12.5%
Rural	25%
Household Income	
<Poverty Line	37.5%
>= Poverty Line	62.5%
Employment Status	
Employed, Self-employed	62.5%
Unemployed	37.5%

Table 2: Demographic Information for Organizations Interviewed

Demographic Indicator	Organizations (*n*=31)
Organization Category	
NGO	78.1%
Govt. Agency	3.1%
Academic/Research	3.1%
Private	12.5%
Financial Development	3.1%
Urban/Rural Setting	
Urban	84.4%
Rural	15.6%
Services Provided	
Social Services	18.8%
Microfinance	15.6%
Educational	15.6%
Financial coaching	6.3%
Other	43.7%
Data Collection Methods	
In-Person	50%
Hybrid	40.6%
Remote	9.4%
Employees	
>1,000	6.3%
100-999	43.8%
<100	50%
Funding Sources	
Earned Income	53.1%
Blended + Donations	6.3%
Grants	6.3%
Sponsorships	6.3%
Donations	28.1%

Using MAXQDA software, common themes emerged from interviews with organizational leaders, employees, and families. Following the COM-B and SDOH (Gasser, 2019; African American Health Coalition, 2016) theory framework and the RE-AIM (Feldstein & Glasgow, 2008) evaluation framework to formulate the interview questions, the following themes emerged from the data organized by these theories.

First, regarding reach, Fundacion Paraguaya is accurately reaching their intended audience for follow-up surveys as families are accessing it through assigned facilitators. Second,

the effectiveness or impact is overall positive as recorded by all participants, namely organizations, employees, and families. Third, the principle of adoption of the follow-up survey amongst all participants is high as they see it as fundamental for evaluating and measuring progress and impact for organizations and families.

Fourth, implementation is the area that needs immediate focus. The data showed that organizations are following up with their participants. Some record daily, more often monthly. However, the follow-up survey rate is low. Therefore, there is a stark difference between follow-up and conducting the follow-up survey. Referring to the COM-B behavior model (Gasser, 2019) as to why individuals do or do not adapt an intervention, they need adequate capabilities, opportunities, and motivations.

Starting with motivation, motivation overall is strong amongst employees, organizations, and families but could be improved by providing incentives or competitions as appropriate to help families and organizations prioritize completion of the follow-up survey process. Next, opportunities and obstacles are present, yet can be addressed with interventions such as expanding the Solutions and to creating a self-directed way for individuals to take the follow-up survey to eliminate some of the barriers. Lastly, capabilities. Participants reported this as the greatest need to improve their implementation of the follow-up survey. The consensus shows a need for ongoing training for organizations, facilitators, and families.

Finally, the maintenance factor of the RE-AIM framework (Gasser, 2019) is dependable for the follow-up surveys as they are constructed into the Poverty Stoplight methodology. The subsequent reports delve into the key themes identified from the data, accompanied by quotes from participants to substantiate those themes, and recommendations for interventions proposed by participants.

Capabilities

First, interviewees recognized that organizations achieving at least 80% follow-up rates have ongoing follow-up and recognition practices for even small achievements. Also, they ensure participant well-being and are committed to the program and its process, including follow-up surveys. Organizations that focus on retreats and are transparent with their objectives build trust with participants. Also, organizations that ensure staffing and retention strategies for employee support. Finally, those who support families with action plans, incentives, and training and emphasize the facilitator-participant relationship and its impact on follow-up rates have higher participation in follow-ups.

"The organization must be committed to the project in general. From the beginning, it must understand the actions that must be taken to support participants comprehensively. The importance of continuing with the project in the long term must be communicated." (Employee 2 interview)

Next, training impacts the capabilities of participants and their ability to participate in the follow-up surveys. The data showed that most interviewees viewed the initial general training at the beginning of their program as sufficient for conducting follow-up surveys. This includes families who found the training on the significance of the colors in the study and the placement of colored stickers helpful and interactive. However, there is a discrepancy in the data, as shown in later interview questions regarding recommendations for improvement. Most interviewees requested ongoing, step-by-step training for the program from beginning to end or specific training suggestions for organizations, facilitators, and families. Organizations requested better training in technology and more visual material, training, and support tools from Fundacion

Paraguaya that have been adapted to the organization's needs to help explain the tool. One international partner said the following:

> *We would like more visual material that we can share with organizations and facilitate the explanation of what our work consists of. The material we can develop internally isn't sufficient. This would give us support and added value to the material we share.* (International partner 4 interview)

Interviewees reported a need for ongoing, systemized, step-by-step training, beginning to end, to scale the tool and help with turnover training. Two international partners commented:

1) *I understand the limitations regarding internships and staff turnover, as this can affect continuity and knowledge transfer. However, I believe that exploring options such as ongoing training and detailed documentation of procedures can help mitigate these challenges and ensure a smoother transition when there are changes in the personnel assigned to the stoplight.* (International partner 6 interview)
2) *My takeaway recommendations from that would just be providing ongoing training in some way. It felt like there wasn't a standard curriculum for how to do a lot of the things with the Poverty Stoplight, and it felt like we figured out… what worked best for us and how we wanted to teach people to do that. It would be nice if there were a curriculum that hubs were given. Whether we were the trainees or whether it was a train-the-trainer, and we had a curriculum from a Paraguay Foundation about how they wanted to do things.* (International partner 15 interview)

Intervention Recommendation: Train-the-Trainer Module

The University of North Carolina at Chapel Hill (UNC) reported using a model known as Train-the-Trainer to train new organizations and employees in a step-by-step, systemized way. One member of UNC reports:

> *This last year, we developed a train-the-trainer model for [one of our partners]. They expanded into multiple states. We had previously just been working in North Carolina, and then suddenly, they needed to train hundreds of workers in five states. My team doesn't have the capacity to deliver that much training, so we developed a new curriculum. It's a three-day curriculum. It includes content for the facilitators and the organization administrators in the platform. It was really tailored to how the organization uses the tool. We got great reviews from that. They sent all their state-level trainers to this training, and now they're certified to deliver the one-day training to their workers and their states. We haven't had a lot of questions, technical issues, or problems from the facilitators... I would contrast that to our one-time training that was multiple days but then you're trained as a HUB, and you're done. Our partners didn't get any training from Fundacion Paraguaya, so for us, it's been helpful to have one curriculum that you return to again and again. You can modify it based on needs that we notice our partners have, and everyone's getting a set training.* (International Partner 15 interview)

The Train-the-Trainer (TTT) model, a fundamental component of Training Within Industry (TWI), serves as a structured approach for preparing practitioners to share their knowledge and skills with others, who may subsequently become trainers themselves (see Appendix B, Figure B5). Originating during World War II, this model gained prominence in training a burgeoning workforce and rapidly facilitating skill transfer. The essence of the TTT model lies in its cyclical process: an initial training session, often led by an external consultant or

Master Trainer, is followed by internal trainers, perpetuating the training within the organization. This cascade of skills dissemination fosters consistency in instruction, learning retention, and timeliness of information dissemination (Graupp, 2024). By leveraging internal expertise, organizations can ensure that training aligns with their needs and culture, enhancing acceptance and effectiveness (Pearce et al., 2012).

Moreover, the TTT model offers numerous benefits, including improved learning outcomes, streamlined onboarding processes, enhanced communication, and professional development opportunities (Graupp, 2024). While initial investments in time and resources may seem substantial, the long-term dividends in cost savings and organizational development underscore the value of adopting a TTT approach (Pearce et al., 2012). Through systematic training, ongoing support, and quality assurance mechanisms, Fundacion Paraguaya can utilize this model to structure trainings for organizations, facilitators, and families that are adaptable and always accessible to participants. Included in this training can be a video that captures the whole process of the Stoplight and its impact at each step. One program manager recommended:

> *I would love to have us do a video that captures the whole process of the Stoplight and its impact at each level so that people have a picture in their mind when they start this process: "Oh, this is where we're going. This is what we're trying to achieve with this, and it requires all these steps to get there.* (International partner 16 interview)

Intervention Recommendation: Office Management Project Portfolio (OPPM)

According to the data, another theme is the need for a step-by-step guide for organizations to know which steps to take and in which order. Organizations appreciate that the tool is adaptable to their needs; however, they need more structure to understand how to best

carry out and scale the program. Two leaders familiar with the Poverty Stoplight light program said:

"I mean, have a systematic process that helps organizations act, and that becomes sustainable so that regardless of whether I'm no longer here or part of my team is not here, the traffic light must continue institutionally." (International partner 5 interview)

"We need to establish specific checkpoints at each implementation stage." (Employee 1 interview)

A tool that one organization wants to implement to organize a step-by-step approach for his organization is known as the Office Management Project Portfolio (OPPM). This program manager said:

"We plan to use a format called OPPM (Office Management Project Portfolio). It's a planning tool that outlines everything you will do in a year on one page. Our activities are too many to fit on one page, so we have more than one page, but it's a planning tool exclusive to what we're going to do—how we're going to do the follow-ups, to whom, and what strategies and actions we're going to propose to employees so they can use them as tools to achieve green indicators." (Fundacion Paraguaya Organization 4 interview).

Implementing the One-Page Project Manager (OPPM) at Fundación Paraguaya could significantly enhance project management effectiveness and streamline communication. By adopting this organizational tool, the organization benefits from an increased probability of success, simplified monitoring and control processes, and greater clarity regarding project goals, priorities, and responsibilities (Duke Project Management Community of Practice, n.d.). The OPPM enables stakeholders to summarize complex projects on a single, information-rich page, facilitating better decision-making and problem-solving. (see Appendix B, Figure B6) With a

focus on simplicity and clarity, the OPPM empowers managers to create, update, and communicate project plans efficiently, ensuring alignment with organizational goals and priorities (Campbell & Collins, 2010). Furthermore, the OPPM's integration with the Toyota A3 report offers an enhanced management tool, combining strategic planning with execution and problem-solving methodologies. Through real-world case studies and practical insights, Fundación Paraguaya can leverage the OPPM to drive strategy, solve problems, and hold project teams accountable for success, ultimately driving organizational growth and impact. According to the COM-B model (Gasser, 2019), participants demonstrate a sustainable level of motivation for completing follow-up surveys. Despite existing obstacles and external factors, there are opportunities for overcoming them. However, enhancing the capabilities of organizations, facilitators, and families through ongoing training, such as the Train-the-Trainer model, is expected to increase follow-up rates for Fundacion Paraguaya.

Training suggestions for organizations recommended by various interviewees include the importance of promoting the tool to be beneficial beyond achieving green indicators, emphasizing its role in empowering families to drive change. Another critical factor is that organizations should take responsibility for correct data input to avoid contaminating the data. Finally, organizations suggested emphasizing the follow-up survey more. There is a need for more intensive training regarding implementation.

Training suggestions for facilitators primarily focused on the principle that facilitators are vital in helping families progress and understand the value of follow-up surveys. Their presentation and treatment of the family are crucial to helping families remain engaged in the program. In addition, organizations recommended that families be educated on how the follow-up survey benefits them as a family to see the value. This way, organizations have experienced

no objections from families to take the follow-up survey. Finally, families asked for more workshops or training about domestic violence, healthcare, and garbage control.

Opportunities (External Factors)

Employees identify organizational commitment and execution as the primary external factors impacting follow-up rates. They emphasize the importance of effectively communicating and training organizations on the Poverty Stoplight program to ensure participant engagement. Challenges impacting an individual's opportunity to take the follow-up survey include limited organizational management of the tool and capacity constraints, with some organizations facing resource limitations due to the high demand for follow-up surveys compared to staff capacity. Additionally, organizational accessibility for low-income participants, including office hours, childcare, and transportation barriers, poses obstacles. In addition, some organizations do not have a system where follow-up surveys are routine. In these cases, facilitators must go out of their way for participants to take the follow-up survey. It's viewed as something extra. Other factors included economic constraints, lack of time, country-specific issues, extreme weather, maternity leave, illness, violence, families living far away from facilitators to survey them, a lack of electricity or internet, and lack of literacy amongst families. However, interestingly, these external factors were mostly reported by organizations or employees with only two out of sixteen family members stating external factors as obstacles to taking follow-up surveys.

Motivations

Families participating in follow-up surveys are motivated by the opportunity to track their progress and contribute to the overall advancement of their community. Their engagement reflects a desire to witness personal growth and collective development. Additionally, families are driven by the prospect of creating a global community and supporting others on similar

journeys, aligning with the ethos of walking alongside the less privileged and collaborating to fulfill shared aspirations. Partnerships with organizations allow employees to work towards realizing the dreams of the communities they serve, fostering a sense of purpose and fulfillment. Similarly, the tech team finds motivation in believing that their contributions to follow-up surveys positively impact the community, reinforcing their commitment to social good.

Reach, Effectiveness, and Impact

Utilizing the RE-AIM analyzing framework of effective intervention, the following themes emerged from the data regarding reach, effectiveness, and impact. The follow-up surveys conducted by Fundacion Paraguaya demonstrate significant reach and effectiveness across various domains. They have resulted in numerous success stories, with families experiencing transformative changes in their lives and well-being. Moreover, these surveys contribute to organizational stability by reducing turnover and minimizing absences among employees, fostering a sense of loyalty and commitment. Beyond individual impact, the surveys can potentially reshape societal perspectives on poverty alleviation, prompting organizations and the public to reconsider their approaches and support mechanisms. The Poverty Stoplight initiative inspires organizations in the United States and abroad, challenging preconceived biases and highlighting its effectiveness in addressing poverty-related issues.

Furthermore, the follow-up surveys are crucial in empowering women by enhancing their financial literacy, improving overall well-being, and aiding educators in lesson planning. Families involved in the surveys emphasize the importance of teamwork and consistently report enhanced well-being because of their participation. One organization reported:

"The impact of the Stoplight has been significant. Not only on the families to which it is applied but also on the mentors who accompany these families. We have observed how people

feel motivated to contribute to other families and change their reality." (International partner 20 interview)

Adoption

The themes that emerged from the data regarding adoption are that participants, particularly families, recognize the follow-up survey as an opportunity to become aware of one's situation. They can visualize concrete evidence of their progress, which provides motivation. For family code trends using the MAXQDA software, see Appendix D, Figure D1. It provides visual and concrete evidence of progress, which motivates all those involved. The survey is organic, adaptable, easy to understand, and simple to use. The average Net Promoter Score (Dawes, 2023), a scale from 0-10 communicating how likely the participant is to recommend the follow-up survey, was 8 out of 10 amongst the three sampled groups. This indicates overall satisfaction with the survey. Each interviewee agreed the follow-up survey would be fundamental in evaluating and measuring progress and impact for organizations and families. The consensus is that individuals do not participate in the follow-up survey because either the organization or the individual does not find value in the tool.

Implementation

Implementation Strategies

The key implementation strategies for the follow-up survey revolve around using incentives, which include contests, awards, raffles, bonuses, and certificates. While some organizations provided no additional incentives, they offered program perks. The frequency of follow-up surveys varied, with most organizations opting for annual surveys while others conducted them every two months to two years, depending on the participant's needs. Surveys were administered either in person or through a hybrid system. Families expressed motivation to

work together to implement the Poverty Stoplight program, highlighting the strengthened cohesion within these groups. Participating in follow-up surveys as a group offers several benefits, including allowing members to support each other and collaborate to achieve positive outcomes. One organization supported the strategy to have participants in groups:

> *Motivation has increased thanks to group support and references from other families who have achieved positive changes in their lives. Recently, we talked with families from various sectors, and many mentioned how the group provides them with a sense of belonging and inspiring references. This recognition of the program's benefits is in its early stages, but we are already seeing some significant results due to motivation and collective support. We are making progress step by step in this implementation.*
>
> (International partner 11 interview)

Additional prominent themes concerning implementation strategies involve families receiving comprehensive training on the program timeline, including follow-up procedures, upon program initiation versus waiting until later when the follow-up survey needs to be scheduled. This comprehensive training has been observed to enhance follow-up rates. Furthermore, communication channels such as WhatsApp and Facebook are utilized to disseminate training materials, follow-up reminders, and celebrate successes and competition winners. Consistent follow-up with organizations has been shown to sustain motivation and uphold the tool's value over time, facilitating easier scheduling of follow-up activities.

Obstacles to Implementation

Based on the data, a primary obstacle to follow-up survey completion appears to be twofold. Firstly, despite ongoing revisions to the survey, participants expressed dissatisfaction with the survey, particularly regarding the comfort level of questions and survey length.

Secondly, respondents highlighted issues with the last section of the survey, which focuses on setting goals by citing unfriendly and shaming questions. Additionally, participants note redundancy in survey questions or instances where questions did not align with their organization's context, further impeding completion rates.

"Much of the feedback we get is about the length of the survey not fitting into the service delivery model that our partners have, so they don't always have an hour to meet with someone just to conduct an assessment." (International partner 17 interview)

"Something that hopefully is in the works is shortening the survey a little bit. The length of the survey just tends to take up a lot of our time, especially with our follow-ups. Most of our meetings are an hour long. So taking the survey takes the majority of the time." (International partner 15 interview)

"The last section, I find, is rather stark…the question, "Why don't you have it?" is the first question. Can seem like a shaming sort of question. "Why haven't you done this yet?". I hear my mother when I hear that question. So just finding better ways to make that more supportive and encouraging." (International partner 18 interview).

Intervention Recommendations: Shortening the Survey

Based on feedback and suggestions from interviewees, several recommendations have been proposed. Firstly, implementing a tiered survey approach was suggested, wherein participants first complete a shorter survey (Survey A) focusing on indicators with quicker achievements. Once these indicators are green, participants can progress to a more extended survey (Survey B) with more extensive indicators, such as homeownership. This sequential approach aims to shorten the survey duration while preparing participants for more complex

assessments. Additionally, recommendations were made to streamline the socioeconomic section by auto-populating data and simplifying and shortening questions.

Furthermore, it was suggested that questions be categorized, the most relevant ones be prioritized, and an overview of each section be provided. Subsequent questions would then be prompted based on initial responses, allowing participants to delve deeper into specific indicators, enhancing the survey's efficiency and effectiveness. Some organizations recommended the following:

1) *I believe an important suggestion for improving Fundación Paraguaya's programs and services is to simplify the socioeconomic and follow-up surveys. In my experience, we have found that the initial survey can be too long and complex, which may discourage people from participating. I suggest reducing the number of questions and focusing on gathering essential information that is truly needed. This will make the survey quicker and easier to complete, increasing participation and the quality of the collected data.* (International partner 8 interview)
2) *I don't like it; 50 indicators are 50. That's a lot, and there are more challenging indicators. They are all important. But how nice would it be to have a Poverty Stoplight with shorter indicators? I believe this is an issue to be reviewed; maybe we do not need 50. We need 30 first, which are the first ones that the family must work with. After they are green, we have a second traffic light of other indicators that are of a longer-term."* (Fundacion Paraguaya Organization 2 interview)

Intervention Recommendation: Create an Application Supported by AI

A comprehensive approach to enhancing engagement and efficiency in follow-up surveys involves the development of an integrated app designed to empower families and streamline

survey processes. By consolidating all functionalities into a single platform, families can take a more self-directed approach, engaging in daily check-ins and receiving reminders for follow-up surveys. Incorporating AI technology further augments the user experience, generating resources tailored to participants' specific needs. Striking a balance between remote and in-person survey administration ensures flexibility to accommodate diverse participant requirements. Automated reminders and dashboard settings facilitate timely survey completion, while features promoting group work enable users to connect with others in their area for mutual support. Fundacion Paraguaya's pilot app "Myne" exemplifies this vision, leveraging gamification and community connections to facilitate achievement tracking and resource access. A countdown feature on the platform enhances accountability, prompting organizations and families to prioritize upcoming surveys through timely notifications. Through these multifaceted efforts, the goal is to strengthen engagement, efficiency, and collaboration in follow-up survey processes, ultimately empowering participants and organizations to achieve meaningful impact. Interviewees who are familiar with the Myne app said:

> *What we've played with last year is the Myne project. It's an app to move the methodology from an organization-centric approach to a consumer-led approach whereby this app would attach their life map for a service user on their smartphone. There's great potential in this because in between a first survey and a follow-up, the individual might forget all about doing a follow-up…You've got to get people healthily independent of support to take that responsibility. Instead of waiting for a support agency, you could be getting through that yourself. Not everybody can do it. But it's available for those people who are familiar with it.* (International partner 19 interview)

The Myne app, supported by AI, offers Fundacion Paraguaya an opportunity to enhance the effectiveness of delivering follow-up surveys, placing analysis directly in the hands of users. By integrating aspects of the Stoplight program into its platform, Myne tracks achievements and connects users with nearby solutions tailored to their needs. For example, suppose a user identifies a repair need in their home. In that case, the app facilitates connections with local service providers, simultaneously addressing user concerns and generating work opportunities within the community (Myne, n.d.). This mobile health intervention aligns with the principles of the Job Demands-Resources Model and has shown promising results in managing workplace stress (Weber et al., 2019).

Additionally, the effectiveness of mobile apps in addressing complex health issues, such as suicide prevention, has been demonstrated in various studies, underscoring the potential of technological solutions in supporting mental health initiatives (Sarubbi et al., 2022). Through its features promoting ownership, data discovery, and community engagement, Myne empowers individuals and organizations to track progress, set goals, and collaborate towards positive transformations. As Fundacion Paraguaya seeks to optimize its follow-up survey processes, leveraging the capabilities of the Myne app can facilitate greater engagement, efficiency, and impact among participants and stakeholders alike.

Intervention Recommendation: Improve Data Quality

One significant concern Fundacion Paraguaya's tech team recognizes revolves around data cleanliness. The issue arises when families input their personal information during registration for their baseline survey, including details like phone numbers, addresses, and names. However, suppose this information is entered incorrectly or modified later. In that case, the system may create duplicate entries, mistakenly registering follow-up surveys as new

baseline surveys—this discrepancy in data labeling results in an inaccurate portrayal of the follow-up rate. Additionally, there are concerns regarding the overall quality of the data due to inconsistencies in data entry by organizations, further compromising the accuracy of the information. To support this point, organizations have reported having higher follow-up rates than Fundacion Paraguaya's data base shows. To address these challenges, the tech team has implemented monthly data cleaning checks and introduced family codes to reduce the occurrence of duplicate accounts.

Furthermore, assigning Sponsorship Numbers (SN) and Household Sponsorship Numbers (HSN) has been proposed as a more reliable method than documentation numbers, particularly for those individuals who wish to remain anonymous. These measures aim to improve data integrity and mitigate the impact of data quality issues on follow-up survey metrics. Regarding assigning codes, interviewees experience the following:

"The organization has requested that, instead of a valid identity document for the country, they use an identification number. The organization has assigned a number to each family to use for each survey." (Fundacion Paraguaya employee 3 interview)

> *In the first year, we identified the mothers who completed the surveys, but for the second year, due to the difficulty of knowing the names of all family members, we decided to title the survey by Sponsorship Number (SN) and Household Sponsorship Number (HSN), which would facilitate data comparison. However, there were occasions when mothers forgot they had completed the survey the previous year, so I had to delete those responses.* (International partner 3 interview)

Intervention Recommendation: To "Expand the Solutions Bank"

The final central theme extracted from the data emphasizes the need to broaden the existing repository to support organizations, employees, and families engaged in the program. Families will benefit from an extended range of potential solutions tailored to their needs, empowering facilitators with an enriched toolkit to foster idea generation and problem-solving. Similarly, this initiative will serve as a platform for facilitators, employees, and organizations to exchange an expanded array of best practices, successful strategies, and innovative approaches. Through enhanced collaboration and knowledge sharing, the expanded Solutions Bank will facilitate accelerated training for new employees or organizations by offering diverse examples and case studies from seasoned counterparts. This initiative will promote overall improvement and broader dissemination of knowledge across multiple channels, including books, apps, and online courses. Moreover, it will enable comprehensive comparisons of best practices within Fundacion Paraguaya and beyond, furnishing families with invaluable resources and supporting the training of new organizations through access to the expertise of experienced peers. Some partners commented:

1) *[Something] important that is talked about very little is the bag of solutions. You can search indicator by indicator and find solutions. This helps a lot if someone who is applying the poverty stoplight in a community finds these solutions.* (International partner 21 interview)
2) *Additionally, it would be beneficial for us to have to exchange experiences and explore best practices with other organizations implementing similar programs. This way, we could obtain additional ideas and recommendations on how to improve our methodology for future implementations of the Stoplight program.* (International partner 11 interview)

3) *"We need the ability to collaborate in building a better way to share our data for researchers, studies, etc."* (Fundacion Paraguaya employee 3 interview)
4) *I want to comment on something: when we started with all this about the Stoplight system, I felt very lost about where to begin. So, perhaps when starting with another organization on the Stoplight system, you could have the opportunity to share with organizations that already work with it and explain the methodology and how it is being applied so they have a clear idea from the start. It would even be helpful for them to have the Stoplight system themselves so they already know what they will be bringing to the families in the field. This would be my main recommendation to avoid working on something without feeling confident about what is being done.* (International partner 2 interview)

In summary, by expanding the Solutions Bank to serve as a platform for sharing information among researchers, families seeking solutions, organizations, and employees looking to network and exchange ideas, this intervention has the potential to enhance the impact of the Poverty Stoplight program.

Less prominent yet crucial themes regarding barriers to implementation encompass various aspects. Firstly, while most costs encountered by organizations were appropriately planned for in the budget, some expenses fell outside of this framework. These additional costs included expenditures on electronics for surveys, staff salaries, incentives, training, and transportation. Families highlighted specific challenges, such as the ineffectiveness of programs like "Reading with the Children." Additionally, some companies find it challenging to prioritize and allocate funds for social responsibility initiatives due to the subjective nature of the tool.

Families often lack resources and struggle with understanding goal setting, hindering their ability to work towards objectives.

Moreover, employee and participant turnover decreases follow-up rates, as new employees require training, and participants may no longer be actively engaged in the program. Furthermore, organizations sometimes face limitations in managing the tool and following up with end-users, leading to inefficiencies. Some organizations may also lack sufficient resources or capacity to meet demands, such as the volume of follow-up surveys concerning staff capacity. Lastly, organizations may request additional support and resources from Fundacion Paraguaya to address various challenges, highlighting the need for faster responses and increased assistance.

Less prominent yet noteworthy innovation ideas provided by interviewees encompass several key areas. Firstly, there is a call to improve the incentives system, with suggestions such as creating competitions among organizations to encourage the completion of follow-ups and providing recognition for those who excel in this regard. Additionally, there is a recognized need for a survey or test to assess user experience regularly, allowing for the prioritization of improvement projects. Families emphasized the importance of organizational leaders experiencing the impact firsthand through in-person assessments in communities. Another proposed idea is the designation of a dedicated monitoring and evaluation person for follow-up surveys and the implementation of a weekly newsletter to provide updates on program or technological improvements, department changes, and company direction. There are also suggestions for technological enhancements and the creation of reward systems for families to report their progress and successes, including establishing a social media platform where users can share their success stories.

Furthermore, the "Graduation Option" concept is proposed to transition away from tracking follow-ups once certain milestones are achieved. Lastly, interviewees stressed the importance of emphasizing the link to access the survey to ensure participation. These innovative ideas, spanning various domains, aim to enhance the effectiveness and engagement of the follow-up process.

Maintenance

Sustainability is ensured through the structured framework of the Poverty Stoplight program, where participating organizations are asked to conduct follow-up surveys at predetermined intervals, typically spanning from three months to two years. The platform facilitates the administration of these surveys, allowing organizations to gather quantitative data illustrating progress over time.

In summary, the interview transcripts were analyzed using line-by-line coding. Inductive elicitation of themes using MAXQDA were organized into the following categories: capabilities, opportunities, motivations, reach, effectiveness, adoption, implementation, and maintenance (sustainability). The most common words used throughout all transcripts were *people, program, community, and training* (see Appendix D, Figure D2). The priority categories where methodologic intervention is needed include capability and implementation. See the priority-ranked themes, quotes from interviewees supporting this theme, and recommended interventions in *Table 3*.

Table 3: Priority-Ranked Themes

Priority-Ranked Themes	Endorsements from Interviews	Recommended Interventions
1) Need for **ongoing**, systemized, step-by-step **training** for organizations, facilitators, and families.	*"My recommendations [is] providing ongoing training in some way. It felt like there wasn't a **standard curriculum** for how to do a lot of the things with the Poverty Stoplight."* (International Partner 15 interview)	• **Train-the-trainer model** (Graupp, 2024; Pearce et al., 2012) • **Office Management Project Portfolio (OPPM)** (Duke Project Management Community of Practice, n.d.)
2) Dissatisfaction with the survey, particularly regarding the comfort level of questions and **survey length**	*"Much of the feedback we get is about the **length of the survey not fitting into the service delivery model** that our partners have. They don't always have an hour to meet with someone just to conduct an assessment."* (International partner 17 interview).	• **Tiered survey approach** • **Categorize questions**
3) Move the methodology from an organization-centric approach to a **consumer-led approach**	*"You've got to get people healthily independent of support to take responsibility. Instead of waiting for a support agency, you could be **getting through that yourself**."* (International partner 19 interview).	• **Myne app, supported by AI** (Myne, n.d.; Weber et al., 2019; Sarubbi et al., 2022)
4) **Data quality problem**, data duplication	"I have **families with the same code**, and when processing the database, it becomes confusing. I came across 20 or 30 follow-up surveys that are actually baseline surveys." (International partner 6 interview).	• **Monthly data cleaning checks** • **Family codes [Sponsorship Numbers (SN); Household Sponsorship Numbers (HSN)]**
5) Broaden the existing **Solutions Bank**	"Additionally, it would be beneficial for us to have to **exchange experiences and explore best practices** with other organizations implementing similar programs." (International partner 11 interview).	• **Access for researchers** • **Books, apps, and online courses to support families** • **Communication between organizations for best practices**
6) The follow-up survey helps individuals become **aware of their situation** and can **visualize concrete evidence** and **reflect on their progress**. This is **motivating**.	*"The impact of the Stoplight has been significant. We have observed how **people feel motivated to contribute**. We call this "awakening"."* (International Partner 19 interview)	• **Supports evidence of an effective and maintainable follow-up process**

Intervention Evaluation Using RE-AIM Framework

The qualitative evaluation of the follow-up process following the intervention evaluation using the RE-AIM Framework yielded valuable insights into its effectiveness, adoption, implementation, and maintenance. Program managers, social workers, and HR representatives provided diverse perspectives, while families from various occupations contributed to a comprehensive understanding. Despite inviting 41 organizations, 26 participated, with reasons for non-participation ranging from unresponsiveness to civil unrest.

Effectiveness was demonstrated through impactful system and policy changes driven by end-user feedback. Influenced by this study, Fundacion Paraguaya instituted the policy change to conduct an annual qualitative analysis policy with end users to continue improving processes. In addition, changes were made to the platform to allow organizations to see the number of follow-up surveys completed. The methodology team changed how unique family codes were created to prevent duplicates when an individual took a follow-up survey. In addition, they established a bimonthly data cleaning process with an intern who will be with the foundation until the

beginning of June. After this time, the data analyst will continue this process. Implementation strategy for follow-up survey implementation. Additionally, regarding physical resources, new chairs, and a television have been purchased for the technology department to assist in their increasing responsibilities. Plans awaiting approval include allowing families to complete follow-up surveys on their profiles.

Adoption varied among organizations, with some perceiving the intervention as a lower priority. However, its application across diverse regions virtually underscores its potential global relevance.

Implementation was robust, ensuring consistent delivery and comprehensive outreach to potential interviewees over six months. Significantly, the intervention incurred no tangible costs, as all participants volunteered their time.

Maintenance is evident in Fundacion Paraguaya's commitment to annual assessments, reflecting a proactive approach to ongoing evaluation and improvement. This commitment aligns with the RE-AIM framework's emphasis on sustainability and long-term impact. Overall, the assessment underscores the intervention's efficacy in eliciting meaningful changes and fostering a culture of continuous improvement within Fundacion Paraguaya.

The project's clinical significance lies in its ability to identify areas for improvement in Poverty Stoplight's methodology as well as providing a reliable tool for healthcare providers to assess an individually holistically. This study resulted in impactful interventions derived from emerged themes, significantly influencing various aspects within Fundación Paraguaya.

Discussion

It was found that the majority of families want to complete follow-up surveys and receive follow-up from their organizations. Organizations all reported consistent follow-up with their

families through facilitators. Participants understand the importance of follow-up surveys, however, there is a disconnect from possible poor data quality that is currently being cleaned regularly. Organizations for the most part reported completing more follow-ups than Fundacion Paraguaya's record showed, meaning there is a disconnect in the technology. In addition, some international partners reported their system not having the follow-up survey process built into their system, making the follow-up process more difficult.

In addition, organizational commitment and execution emerged as crucial external factors influencing follow-up rates, underscoring the importance of effective communication and training for participant engagement. Challenges included limited organizational management of the tool, capacity constraints, and accessibility issues for low-income participants. According to the COM-B model (Gasser, 2019), participants demonstrate a sustainable level of motivation for completing follow-up surveys for the opportunity to track their progress and contribute to community advancement, reflecting a desire for personal and collective development. Also, despite existing obstacles and external factors, there are opportunities for overcoming them. The surveys demonstrated significant reach and effectiveness, leading to transformative changes in participants' lives and organizational stability. Additionally, they played a crucial role in reshaping societal perspectives on poverty alleviation and empowering individuals.

Despite high satisfaction levels and adoption rates of the follow-up survey process, obstacles to implementation include a need for further training amongst all participants of Poverty Stoplight, dissatisfaction with survey length and questions, a need to enable the end-user to take the follow-up survey independently, a concern regarding data quality and duplication, and the need for a more expansive Solutions Bank. In addition, enhancing the capabilities of organizations, facilitators, and families through ongoing training, such as the Train-the-Trainer

model, is expected to increase follow-up rates for Fundacion Paraguaya. Further recommendations of study to address these obstacles include refining survey questions and taking a tiered-survey approach, developing an integrated app, incorporated with AI, that empowers families and streamlines survey processes (i.e. Myne app). Recommendations for further study include addressing data duplication to improve data quality, utilizing codes to identify families and emphasize the responsibility of organizations to input data correctly to avoid data duplication, and expanding the "Bank of Solutions" to benefit internal and external users of the Poverty Stoplight.

These interventions can have transformative impacts across Fundación Paraguaya, empowering providers, optimizing systemic operations, and informing evidence-based policy decisions. By advocating for regular qualitative evaluation and feedback mechanisms, Fundación Paraguaya ensures the sustainability and effectiveness of these interventions in combating poverty and empowering vulnerable communities for sustainable change.

Limitations

The completion of our implementation science project was constrained by several limitations, preventing us from fully realizing our intended objectives. While we successfully gathered valuable perspectives from stakeholders regarding the Poverty Stoplight follow-up process, we could only accomplish the initial phase of our project. Several barriers hindered our progress, such as civil unrest in certain countries, the holiday season, international schedule conflicts, and partners engaged in other studies or renegotiating contracts.

One notable limitation was the potential for selection bias due to our reliance on active partners, which may have skewed perspectives toward the partner's viewpoint of Fundación Paraguaya. Additionally, civil unrest in certain countries further restricted participation, limiting

our study's diverse perspectives. Furthermore, ongoing data cleaning processes may have impacted the accuracy of follow-up rate percentages, potentially influencing the interpretation of our results.

Despite these limitations, we adapted our approach by creating additional deliverables for our interviewees, including certificates of participation. Moving forward, we plan to provide the organization with a comprehensive final report, detailing coded themes, evidence, and interventions suggested to address their top needs. Specifically, we will tailor an implementation science framework focused on training across various groups within the organization. The recommended intervention, the train-the-trainer model, will be outlined in this framework to guide the organization in carrying out this project effectively.

Although our project faced challenges and limitations, the results remain essential for the foundation, providing robust internal data to inform resource allocation and intervention strategies. By acknowledging and addressing these limitations, we aim to enhance the rigor and validity of our findings, ultimately contributing to the overarching evidence-based project aimed at combating poverty and empowering vulnerable communities.

Next Project Phase: Application of PRISM/RE-AIM Frameworks with Train-the-Trainer

This framework outlines a systematic approach to implementing the PRISM-RE-AIM implementation science methodology, incorporating a Train-the-Trainer (TTT) model for ongoing, dynamic training of organizations, facilitators, and families. If time and circumstances had allowed, this would have been the project format to be followed.

1. Needs Assessment:

- Conduct a comprehensive needs assessment to identify key areas requiring training among organizations, facilitators, and families.

- Gather input from stakeholders to prioritize training needs and tailor interventions accordingly.

-This segment was completed through this qualitative evaluation study.

2. PRISM-RE-AIM Framework Integration:

- Utilize the PRISM-RE-AIM framework to guide the implementation process, ensuring a comprehensive program planning, implementation, and evaluation approach.

- Apply PRISM principles to enhance the training program's practicality, robustness, and sustainability.

- Incorporate RE-AIM evaluation dimensions to assess the impact of the training on various levels.

3. Train-the-Trainer Model Design:

- Develop a structured Train-the-Trainer (TTT) model to equip designated trainers with the necessary knowledge and skills to deliver training sessions effectively.

-Possibility to inquire the University of North Carolina about their training design

- Designate experienced trainers to conduct TTT sessions for organizational leaders, facilitators, and community members who will serve as trainers within their respective groups.

4. Training Content Development:

- Create dynamic and interactive training materials tailored to the specific needs of organizations, facilitators, and families.

- Include modules covering Poverty Stoplight methodology, data collection and analysis, goal setting, community engagement, and follow-up procedures.

- Incorporate case studies, role-playing exercises, and real-life scenarios to enhance learning and application of concepts.

5. Training Delivery:

- Implement a blended learning approach, combining in-person workshops, online modules, and peer learning sessions to maximize training effectiveness and accessibility.

- Schedule regular training sessions to accommodate participants' varying schedules and preferences.

- Provide ongoing support and mentoring to trainers to ensure consistent delivery of training content and adherence to best practices.

6. Evaluation and Feedback Mechanisms:

- Establish evaluation criteria aligned with PRISM-RE-AIM dimensions to assess the training program's impact.

- Collect feedback from participants at each training session to identify strengths, areas for improvement, and training needs.

- Use evaluation findings to refine and enhance the training curriculum and delivery methods iteratively.

7. Sustainability and Continuous Improvement:

- Develop strategies for sustaining the training program beyond the initial implementation phase, including succession planning for trainers and ongoing capacity-building efforts.

- Foster a culture of continuous learning and improvement by facilitating knowledge sharing, peer support networks, and communities of practice.

- Monitor and evaluate the long-term impact of the training program on organizational capacity, participant outcomes, and program sustainability using the RE-AIM framework...

Related Findings

The study's findings align with existing literature on poverty alleviation programs, highlighting common challenges like data accuracy and participant engagement. However, it provides unique insights into the Poverty Stoplight program's context, emphasizing its strengths and areas for improvement, supported by direct quotes from interviewees. Biermann et al. (2022) suggest that while the Sustainable Development Goals (SDGs) have influenced discourse on sustainable development, their transformative impact remains limited. This mirrors my study's discovery that sustainable development movements have influenced perceptions of sustainability and well-being. Both studies encountered similar barriers to implementation, particularly regarding institutional readiness and political incentives. Aboueid et al. (2023) stress the importance of integrating SDGs into national strategies, echoing the significance of initiatives like Poverty Stoplight in addressing poverty within the broader framework of sustainable development goals and strategies.

Recommendations for Further Study

For future research, it is recommended that longitudinal studies be conducted examining the sustained impact of implementing the "Train the Trainer" model as an integral organizational policy within poverty alleviation programs such as Poverty Stoplight. These studies should investigate the immediate outcomes of enhanced facilitator training and the long-term effects on program sustainability, participant engagement, and community empowerment. Additionally, exploring the scalability and adaptability of the model across diverse socio-economic contexts and geographic regions would provide valuable insights into its broader applicability and effectiveness. Furthermore, qualitative research focusing on the experiences and perceptions of facilitators, organizations, and program participants regarding implementing the "Train the Trainer" model could offer a nuanced understanding of its strengths, challenges, and potential

areas for improvement. Lastly, comparative studies examining the outcomes of organizations that have adopted the "Train the Trainer" model versus those that have not could help elucidate its differential impact and inform evidence-based policy recommendations for poverty alleviation initiatives worldwide.

An additional recommendation, as deemed appropriate by leadership, is to undertake a comparable evaluation process involving organizations, employees, and families who have previously disengaged from Fundación Paraguaya. This aims to identify common areas for improvement that may overlap with current initiatives.

Conclusion

In conclusion, the qualitative study on Poverty Stoplight's follow-up methodology has yielded valuable insights into the program's implementation and effectiveness, adding awareness to the multifaceted nature of addressing poverty. Despite encountering limitations and challenges, the study has provided substantial contributions to our understanding of poverty alleviation strategies and has identified avenues for program improvement. By leveraging frameworks such as PRISM and RE-AIM and prioritizing ethical considerations, stakeholders can collaborate to enhance the delivery and impact of Poverty Stoplight interventions. Through ongoing quality improvement initiatives and evidence-based interventions, the study team is committed to improving the effectiveness of follow-up surveys and maximizing the impact of the Poverty Stoplight tool, benefiting both Fundación Paraguaya and the communities it serves.

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Appendix A

Evaluation and Synthesis Tables

Table A1

Evaluation Table for Quantitative Studies

Citation	Theoretical/ Conceptual Framework	Design/ Method/ Purpose	Sample/Setting	Variables	Measurement / Instrumentation	Data Analysis	Results/ Findings	LOE; Application to practice; Generalization
(Li et al., 2022). Who are identified as poor in rural China's targeted poverty alleviation strategy? A multidimensional dimensional capability approach. **Country**: China **Funding**: Not listed **Bias**: None identified	A.F. method	**Design:** Systematic Review **Purpose:** Compared to using the income poverty measure only, the MDP measure in poverty identification improved the targeting performance of the TPA strategy.	**N=** 10,373 households Registered vs nonregistered households from 30 provincial level units and 317 counties. **Demographics:** Gender, age, ethnicity, marital status **Setting:** Rural counties in China **Exclusion:** Original sample included 10,530 rural households. Excluding large number of missing values or outliers on key variables. **Attrition:** 1.49%	**IV1:** "Thousand-person Hundred-Village" TPHV survey **DV1:** rural Chinese citizens **Definitions:** TPHV is an annual research project focusing on rural households conducted by Renmin University of China (RUC) since 2012.	**Tools:** Survey **Validity/ Reliability:** Surveys have high reliability if it produces similar results under consistent conditions	**Statistical Tests Used:** ANOVA test Chi-square test relationship between categorical variables, households being registered into the poverty database or not; T test: test the significant difference in continuous variables between registered and non-registered households * P<0.1, ** P<0.05, *** P<0.01.	**DV1:** TPA strategy multidimensional approach to identify households in poverty **DV2:** Targeting the correct households in poverty was established by M.D. assessment vs income based **DV3:** households that were registered poor (either income poor or multidimensionally poor) and registered non-poor received more government assistance than those who were not registered as poor.	**LOE**: Level 1 **Strengths**: Future policy and research suggestions are given. **Weakness**: Collecting reliable rural household income data through self-reports. Reporting bias possible in survey answers. **Feasibility**: Feasible to attain information in the U.S. with surveys via internet. **Application**: Apply AFM to a census in the U.S. for specific regions.

Key: **AFM** Alkire Foster Method, **CSD** Cross-sectional data, **MDP** Multi-Dimensional Poverty, **MPI** Multidimensional Poverty Index, **MPL** Multidimensional Poverty Line, **Q&Q** Improved Quantitatively and Qualitatively, **SDGs** Sustainable Development Goals, **TPA** Thousand Person Assessment

(Roelen et al., 2022), Graduating out of poverty across generations: Unpacking children's wellbeing trajectories in well-being **Country**: Burundi **Funding**: Irish Aid **Bias**: not stated	Concern Worldwide's Graduation Model' Terintambwe' programme	**Design:** longitudinal mixed-methods approach **Purpose:** Graduation model interventions represent a new wave of anti-poverty programming that seeks to offer a sustainable pathway out of poverty	**N= 2000** **Demographics:** extremely poor, functionally landless households but with adult members who can work. **Setting:** Kirundo province **Exclusion:** Individuals not able to work. Uses Participatory wealth ranking based on well-established local wealth categories **Attrition:** Number not provided	**IV1:** 'Terintambwe' programme (5 interventions) **DV1:** Material well-being **DV2:** Physical **well-being**tion **DV4:** Relational **Qual DV5:** graduation trajectories **Qual DV6:** household and children's outcomes **Qual DV7:** program components and their contribution to trajectories **Qual DV8:** Life history and family mapping in qualitative data **Definitions:** n/a	**Tools:** Survey randomized **Validity/ Reliability:** Surveys have high reliability if it produces similar results under consistent conditions	**Statistical Tests Used:** Thematic analysis NVivo: Findings were subsequently mapped against existing qualitative and quantitative data to gain insight into longitudinal patterns.	**DV1:** Material well-being improved (i.e.well-being both qual. and quant. Most observed trajectory was a drop-improve-decline scenario **DV2:** improved physical well-being (i.e., food sewell-beingr quant and qual. **DV3/5:** Participants more likely to attend school. Decreased after funding ran out. **DV4:** Relational well-being improved both well-being qual **DV6/7/8:** additional themes from qual studies: in-kind support, training and coaching, prioritizing children, gender dynamics, covariate shocks. Economic strengthening positively impacts child well-being	**LOE:** Level 1 **well-being** Contributes ongoing academic/policy debates about the role of household-targeted anti-poverty programs their sustainable impacts **Weakness:** -No inclusion of children's voices -comparison group was not included due to budgetary and logistical constraints **Feasibility:** Feasible with sufficient financial resources. **Application:** **A**pply to any providence or county that experiences poverty.
(Alkire et al., 2011), multidimensi	multidimensional identification method	**Design:** Cross-sectional	**N=45,884**	**IV1:** Union method of identification (1 dimension)	**Tools:** Identification function	**Statistical Tests Used:** Theorem 2.	**DV1:** 12.1% of population income deprived	**LOE:** Level 1 **Strengths:** The methodology

Key: **AFM** Alkire Foster Method, **CSD** Cross-sectional data, **MDP** Multi-Dimensional Poverty, **MPI** Multidimensional Poverty Index, **MPL** Multidimensional Poverty Line, **Q&Q** Improved Quantitatively and Qualitatively, **SDGs** Sustainable Development Goals, **TPA** Thousand Person Assessment

onal poverty measurement **Country**: USA **Funding**: International Development Research Council IDRC and the Canadian International Development Agency CIDA **Bias**: none stated nor identified		**Purpose:** Help countries have a tool to use MDP to supplement or replace official income poverty measures.	**Demographics:** Hispanic, White, African-American, others **Setting:** Profile of U.S. poverty **Exclusion:** Individuals <19 years old **Attrition:** number not provided- data taken from 2004 National Health Interview Survey	**IV2:** Intersection method (all dimensions) **IV3:** intermediate cutoff (person is poor if they are deprived in a certain #of dimensions) **DV1:** income measured in poverty line increments and grouped into 15 categories- poverty focus **DV2:** self-reported health **DV3:** health insurance **DV4:** years of schooling **DV5:** Deprivation focus- 'decomposability' – a property that facilitates targeting. **Definitions: N.A.**	survey-based **Validity/ Reliability:** Greatly reliable as this tool is well suited for ordinal data. Provides a consistent and a replicable equation.	Where a and a′ are the respective attainment vectors for y and y′ in Y, we have: (i) yHy′⇔aFDa′ (ii) aFDa′⇒yM0y′⇒aSDa′, while the converse implications are not true.	**DVI1a:** Variable weights for dimensions **DV2:** 12.7% of U.S. population deprived in health. Determining whether a person is deprived in a certain dimension **DV2a:** Identifies the poor by 'counting' the dimensions in which a person is deprived **DV3:** 18.3% deprived of hlth insurance. **DV4:** 18.5% of U.S. population deprived of high school diploma	includes decomposability **Weakness:** Measurement methods largely dependent on the assumption that variables are cardinal. Many dimensions are ordinal or categorical. **Feasibility:** Feasible to implement methodology in research/intervention/innovation. **Application:** Methodology is intuitive, satisfies useful properties, and applicable to real world data to assess the level of poverty of a group of people- large or small.
(Nawab et al., 2023), Multidimensional poverty index across districts in Punjab, Pakistan: Estimation and rationale	socioeconomic concept	**Design:** Longitudinal research design **Purpose:** The MPI for districts in Punjab based on measure the	**N=** 25,917 villages **Demographics:** School, not in school **Setting:** District offices **Exclusion:** Not reported **Attrition:**	**IV1:** MPI **DV1:** Poverty in Pakistan **DV2: SDGS** **Definitions:** none needed	**Tools:** Cluster survey **Validity/ Reliability:** A survey is reliable as long as the results can be replicated	**Statistical Tests Used:** Decompensation of MPI	**DV1:** Close to one-quarter of the population were in MDP in 2007 **DV2:** To eradicate poverty, education, industrialization, and urbanization play important roles. **DV3:** incidence of	**LOE:** Level 2 **Strengths:** MPI measures the SDG # 1, 2, 3, 4, 6, 7, and 11. **Weakness:** The importance of valuable ends (income) has not been ignored in

Key: **AFM** Alkire Foster Method, **CSD** Cross-sectional data, **MDP** Multi-Dimensional Poverty, **MPI** Multidimensional Poverty Index, **MPL** Multidimensional Poverty Line, **Q&Q** Improved Quantitatively and Qualitatively, **SDGs** Sustainable Development Goals, **TPA** Thousand Person Assessment

to consolidate with SDGs **Country**: Pakistan **Funding**: not noted **Bias**: not identified or noted		QOL, education, and health standards simultaneously observed and experienced by households.	Not reported				MPI in Punjab has downturned by annual average of 1.1%	poverty estimation **Feasibility:** Very feasible as cutoffs are to be determined and then data is to be ran to calculate the MPI of a given community or nation. **Application:** Each country has measurable poverty
(Dhongde et al., 2022) Spatial and temporal trends in multidimensional poverty in the United States over the last decade **Country**: USA **Funding**: none reported **Bias**: none identified or reported	Health Quality of Life (HQoL)	**Design:** Systematic Review **Purpose:** Informing efforts that seek to reduce M.D. deprivation. Examine the relation between MDP poverty and neighborhood characteristics.	**N=** 65,000 4 regions, 50 states **Demographics:** Age, gender, family type, race/nationality, between ages 18-64 years **Setting:** National Survey in USA. ACS American Community Survey **Exclusion:** sensitivity of the MPI. Those not included in data in the ACS **Attrition:** not provided	**IV1:** MPI (health-disabilities, education-high school education, economic safety-health insurance, std. of living-housing costs as % of housing income, social connections-English fluency, housing quality-# of person per room in housing unit) **DV1:** MDP by age groups **DV2:** MDP by gender and family type **DV3:** MDP by Race, ethnicity, and nativity	**Tools:** ACS Public Use microdata Sample (PUMS) files Benchmark index **Validity/ Reliability:** Average annual percentage change in an index. Each value is statistically significant different from the value in the previous year at 5% level of	**Statistical Tests Used:** Regression analysis	**DV1:** MPI was highest (15.6 percent) among children. Decline in MPI over the years was robust across all income groups. 13 % of the United States population was MDP. Poverty rates high in the South and the West and among young adults, immigrants and Hispanics. **DV2:** No major difference in gender. Average MPI was high among single-parent households and almost double	**LOE:** Level 1 **Strengths:** Utilizing a reliable tool (MPI), OPM, and SPM, which increases credibility to the study Useful for policy purposes (i.e., health insurance). Consider income poverty and MDP. **Weakness:** MPI value does not change if MDP becomes deprived in an additional indicator.

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					significance		compared to married couples. **DV2a:** Considered pillars of health: health, education and standard of living. **DV3:** MDP rates were least among Whites, moderately high among Blacks/Asians, and highest among Hispanics (34.7 percent).	**Feasibility:** The utilization of MPI, OPM, and SPM provides replicability for future studies **Application:** QOL more than solely income
(Firdausy et al., 2022). Variables, dimensions, and indicators important to develop the multidimensional poverty line measurement in Indonesia **Country**: Indonesia **Funding**: non listed **Bias**: non identified	Health Quality of Life (HQoL)	**Design:** Mixed methods theory **Purpose:** Determine the qualified poor vs non poor	**N=** 25=focus group 30=pilot survey 274= non-poor survey 315= poor household head respondents 4th stage: In-depth interviews with 8–12 key informants in each survey location. **Demographics:** Government officials, students, poor household heads **Setting:** Focus Group Discussion **Exclusion:** not	**IV1:** Sample respondents' views **DV1:** Are the indicators considered important. **DV2:** Current income poverty line necessary to be replaced by MPL **DV3:** Hierarchy of variables important in developing MPL or not **Definitions:** n/a	**Tools:** Focus Group Discussion, survey questionnaire, interviews **Validity/ Reliability:** A survey is reliable as long as the results can be replicated	**Statistical Tests Used:** ANOVA	**DV1:** Alternative indices of MDP show consistent trends **DV2:** the poor and the non-poor household head respondents, and the interviewees under the survey viewed the MPL measurement as a comprehensive and better poverty measurement. **DV3:** important indicators to developing MPL and policy include capability, empowerment, and opportunity (indicators found within each topic)	**LOE:** Level 1 **Strengths:** Views of the poor and the non-poor household heads. **Weakness:** Multiple components which impact feasibility **Feasibility:** Not as feasible as possible due to several requirements to research **Application:** applicable to eradicating poverty

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			listed **Attrition:** not listed					
(Dhongde et al., 2022). Analyzing racial and ethnic differences in the USA through the lens of multidimensional poverty. **Country**: USA **Funding**: not listed **Bias**: not identified	Health Quality of Life (HQoL)	**Design:** Systematic Review **Purpose:** For practitioners who wish to estimate alternative indices of multidimensional poverty. Analyzing trends by race and ethnicity	**N=** 97,000 to 128,000 **Demographics:** adults between 18 and 64 years old **Setting:** USA population- U.S. Census Survey **Exclusion:** Individuals not in the USA or outside the ages of 18-64 yrs. old **Attrition:** not included	**IV1:** U.S. Americans participating in the U.S. Census **DV1-5:** Five DOWB(Health (disabilities), education, personal activities, political voice and governance, social activities, environmental conditions, personal insecurity and economic insecurity.) **Definitions:** N.A.	**Tools:** Survey (2009 & 2018 from the Annual Social and Economic (ASEC) March Supplement of the Current Population Survey (CPS)) **Validity/ Reliability:** A survey is reliable as long as the results can be replicated	**Statistical Tests Used:** Regression analysis	**DV1:** MDP in the U.S. declined over time regardless of the index used. **DV2:** a large proportion of MDP deprived of health insurance. Policies needed to improve insurance coverage. **DV3:** A higher incidence of MDP was observed among Hispanics, American Indians and Blacks	**LOE:** Level 1 **Strengths:** Suggested 3 indices which improve upon the Alkire and Foster (2011) indices. **Weakness:** No policy or intervention recommendations suggested. **Feasibility:** Feasible with accessible data of individuals **Application:** Indices of choice is applicable to any organization, community, or country to assess poverty.
(Alkire et al., 2019). Dynamics of multidimensional poverty and uni-dimensional income poverty: An evidence of stability analysis	Theory of fuzzy sets, information theory, efficiency analysis and axiomatic poverty indices.	**Design:** multistage, random cluster process **Purpose:** Compare the results of the typical income poverty assessment with MPI.	**N=** nine provinces 216 primary sampling units (19,000 individuals) **Demographics:** Urban Chinese families **Setting:** Rural China **Exclusion:**	**IV1:** multidimensional poverty index for China **DV1:** Income poverty using the panel data from multiple waves of the China Health and Nutrition Survey **DV2:** Indicators:	**Tools:** headcount ratio first-order stochastic dominance (FOSD) method & calculating the rank correlation coefficients.	**Statistical Tests Used:** Tochastic dominance method and regression analysis	**DV1:** China's MDP higher in rural areas and in the less developed Western provinces. **DV2:** relative to the income poverty, the MDP is less volatile. **DV3:** If we control the indicators' weight, then the	**LOE:** Stage 1 **Strengths:** Uses reliable statistical tests to test data **Weakness:** The choice of indicators is restricted by the data survey. **Feasibility:** The MPI is a feasible

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from China **Country**: China **Funding**: not stated **Bias**: not stated			Those outside of the rural provinces **Attrition:** not stated	Education, health, living standards, and work, empowerment, environment, safety from violence, social relationships, culture **Definitions:** N.A.	**Validity/ Reliability:** FOSD is widely used in the sensitivity test of inequality and poverty measurement		MDP measures are stable to a change of indicators.	tool for someone with sufficient data of individuals **Application:** The MPI is very applicable to anyone who needs to calculate MPL
(Ram, 2021). Attainment of multidimensional poverty target of sustainable development goals: a preliminary study **Country**: 34 countries **Funding**: not listed **Bias**: not listed	Theoretical Incidence-Intensity decompositions	**Design:** Cross-sectional data-Empirical analysis **Purpose:** Observed rates of decline in multidimensional poverty headcount with the rates required to reduce the headcount by one-half as envisaged in SDG Target 1.2.	**N=** 951.5 million **Demographics:** 34 countries, poor persons **Setting:** International **Exclusion:** not stated **Attrition:** Not stated	**IV1:** MPI of 34 countries **DV1-2:** Indicators used: years of school, school attendance, child mortality, nutrition, electricity, sanitation, drinking water, flooring (housing), cooking fuel, and asset ownership) which cover the three dimensions of education, health, and living standard **Definitions:** MDPH: the proportion of multidimensionally poor persons in the population	**Tools:** Survey-compound rates of change MPI **Validity/ Reliability:** A survey is reliable as long as the results can be replicated. an internationally comparable measure of acute poverty in over 100 developing countries	**Statistical Tests Used:** relative rate of change; annualized absolute rate of change; annualized relative rate of change	**DV1:** Observed rates of headcount MDP reduction are not enough to lower MDP headcount by one-half during the SDG period of 15 years. **DV2:** 12 countries that are likely to reach the target of reducing the MDPH by 50% within 15 years.	**LOE:** Level 1 **Strengths:** Current rate of poverty reduction in 34 given countries is not fast enough to attain a reduction of 50% of the MDPH within 15 yrs., which is a goal of the SDGs. **Weakness:** This article doesn't explicitly state the statistical test used **Feasibility:** MPI tool creates feasibility with necessary data **Application:** Any country needing poverty assessed.

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Table A2
Evaluation Table for Qualitative Studies

Citation	Theory/ Conceptual Framework	Design/ Method/ Sampling	Sample/ Setting	Major Themes Studied/ Definitions	Measurement/ Instrumentation	Data Analysis	Findings/ Themes	Level/ Quality of Evidence; Decision for/ Application to practice; Generalization
(Singh et al., 2020) Attainment of the sustainable development goal of poverty eradication: A review, critique, and research agenda **Country**: India **Funding**: Chandigarh University **Bias**: not stated	Health Quality of Life (HQoL)	**Design:** Systematic Review **Purpose:** consolidate the literature related to SDG1 in India, since 2015 and to identify futuristic research niches.	**N=** 41 articles **Demographics:** Descriptive, Empirical, Mixed-method, Review **Setting:** India studies **Exclusion:** Articles that were not English articles, peer-reviewed journal articles. Excluded Conference Proceedings, **Attrition:** Not stated	**R1:** India population **R2:** Performance of various indicators of SDG1 in India for public policy changes	**Data Collection:** PRISMA **Data Dependability:** High Dependability. Evidence-based minimum set of items for reporting in systematic reviews and meta-analyses.	**State type used.** Content analysis	(1) Needs better health insurance penetration, rehabilitation, rejuvenation of MGNREGA (2) review of SDG1 related initiatives and poverty in India by focusing on public policy initiatives of the government can be useful for policymakers for taking strategic steps in their fight against poverty and achieving SDG1 targets by 2030.	**LOE:** Lev. 1 **Strengths:** Well-organized and easy to identify sections. Identified the need for more research based around SDGs. **Weakness:** No suggestions on specific policy or intervention specifics to possibly correct deficiencies **Feasibility:** Feasible with appropriate government or leadership support for policy change **Application:** applicable to understanding the outcomes of poverty measurements and how that translates to understanding true impact.

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Table A3
Synthesis Table

Study (Author, year)	(Li et al., 2022)	(Roelen et al., 2022)	(Alkire et al., 2011)	(Nawab et al., 2023)	(Dhongde et al., 2022)	(Firdausy et al., 2022)	(Dhongde et al., 2022).	(Alkire et al., 2018)	(Ram, 2021)	(Singh, 2020)
Design	Systematic Review	Longitudinal mixed-methods approach	Cross-sectional	Longitudinal research design	Cross sectional	Mixed Methods theory	Systematic Review	multistage, random	CSD-Empirical analysis	Systematic Review
Sample										
n subjects	10,373	2000	45,884	25,917	65,000	600	97,000 to 128,000	19,000	951.5 million	41
Other variable	317 counties	Working individuals, but extremely poor	Adults >19 y.o.	villages	4 regions, 50 states	274 non-poor and 315 poor household head respondents	adults between 18 and 64 years old	individuals		articles
Setting										
Multi-regional survey	"Thousand-person Hundred-Village" TPHV survey		Identification function - survey-based	National Survey						
Countries (differentiate USA)	rural Chinese citizens	Burundi	USA	Pakistan	USA	Indonesia	USA	China	34 countries	India
Interventions/Indicators										
MD.Sample	x	X	X	X	X	X	x	x	X	X
SDGs				x				X	X	x
Alkire and Foster method (A.F. method)	x		x		x					
MPI			x	x	x			x	x	
Terintambwe' programme		x								
Education										
Years of School							x		x	
Diploma			x		x					
School attendance		**Q&Q**							x	
Health										
Disabilities					x		x			
Physical Well-being		**Q&Q**		X						
Well-beingurance			x		x					x
Child mortality									X	
Nutrition									x	
Standard of Living										

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Housing costs as % of income					x					
Material Well-being		**Q&Q**		X	X	X				
Electricity									x	
Sanitation									x	
Drinking Water									x	
Flooring (housing)									x	
Cooking fuel									x	
Asset ownership									x	
Industrialization				X						
Urbanization				x						
Social Connections										
English Fluency					X					
Housing Quality										
# of persons/room					X					
Capability										
Empowerment						X	X			
Opportunity						X	X			
Relationship Well-being		**Q&Q**					x			
Outcomes/ Themes										
MDP Approach	X		X	X	X	X		X		
MDP >Income Based						X (MPL>standard income index)		x	X	
Policy changes based on MDP	x						x			x
Current rates of poverty reduction are not fast enough to reach SDGs.									X	

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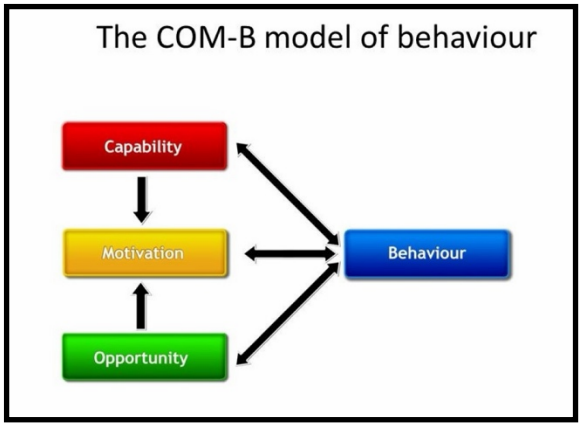
Appendix B

Models and Frameworks

Figure B1
COM-B Model of Behavior



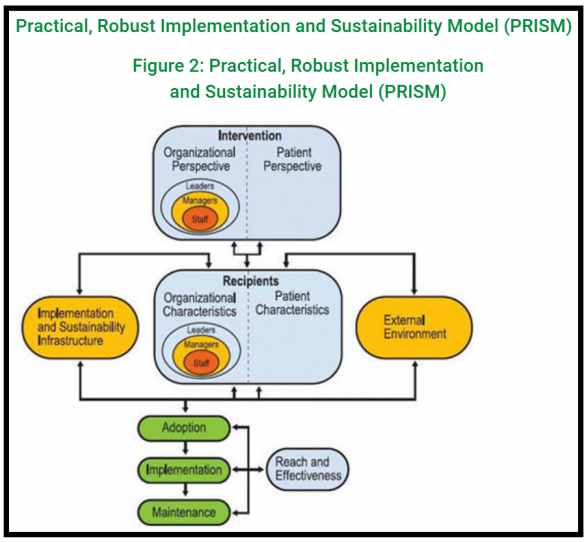
(Gasser, 2019)

Figure B2
Social Determinants of Health

(African American Health Coalition, 2016)

Figure B3

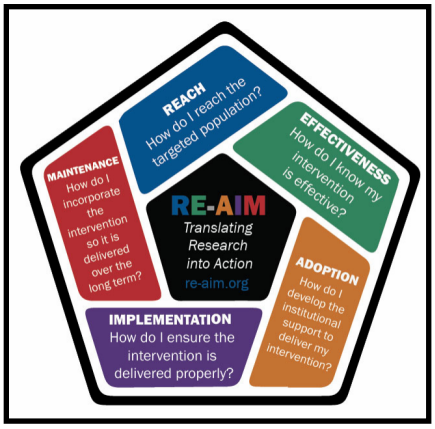
Practical, Robust Implementation and Sustainability Model (PRISM)



(Feldstein & Glasgow, 2008)

Figure B4

Elements of the RE-AIM Framework



(Glasgow et al., 1999)

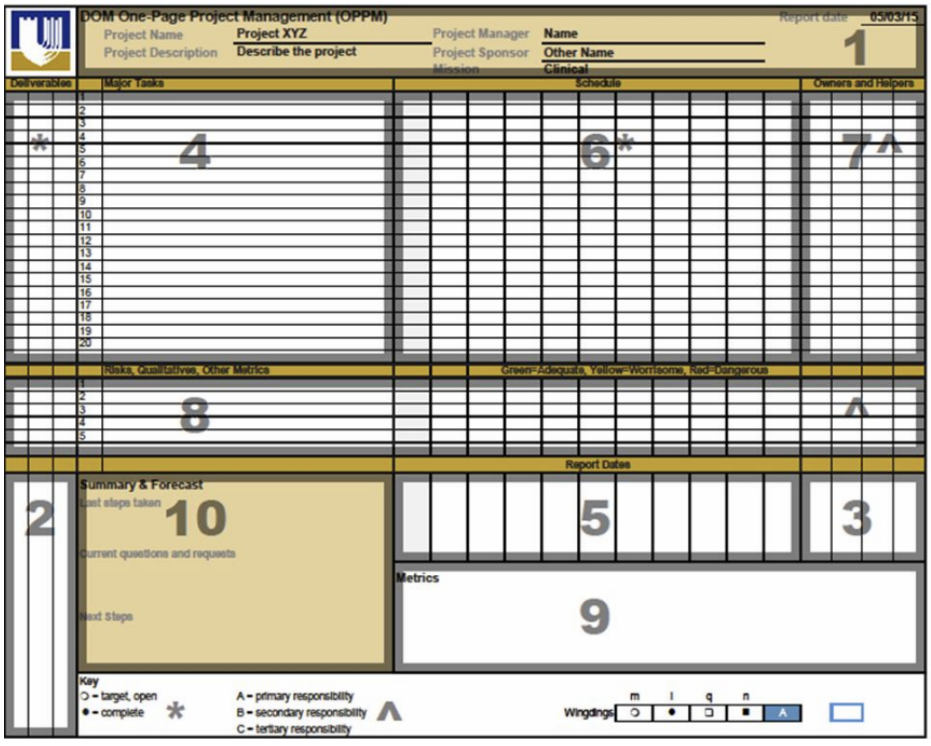
Figure B5

Trainer-the-Trainer Model

(Graupp, 2024)

Figure B6

Office Management Project Portfolio (OPPM)



(Duke Project Management Community of Practice, n.d.)

Appendix C

Budget, Evaluation, and Synthesis Tables

Figure C1

Budget

Total Direct Costs	**$82,013**
Indirect Costs	
Staffing/Project Oversight	
AA rate/hr= $37	
15 Hrs/week self-work for Follow-up (31 weeks)	$17,210
Set Meetings for Follow-up (210 meetings)	$7,800
SMF rate/hr=$2.50	
2 Hrs/ week Self-Work for Follow-Up (31 weeks)	$200
Set Meetings for Follow-up (210 meetings)	$525
MR rate/hr= $50	
2 Hrs/ week Self-Work for Follow-Up (31 weeks)	$3,100
Set Meetings for Follow-up (210 meetings)	$10,500
Partnered Organization Liason	
Unbound ($18.50/hr for non-profit employees, 3 hrs)	$56
DNP Advisor rate/hr= $50	
2 Hrs/ week Self-Work for Follow-Up (31 weeks)	$3,100
Data Analyst Specialist rate/hr= $50	
2 Hrs/ wek Self-Work for Follow-Up (5 weeks)	$500
Total Indirect Costs	**42991**
Total Costs	**$125,004**
Potential Funding Sources	
Fundacion Paraguaya Grant	$82,000
Arizona State University Grant	$500
Revenues Generated (in dollars)	
Membership Fees Reinstated ($125/org., 100 orgs., 2 yrs)	25,000
Potential Gains	
Avoidance of Expenses due to Lack of Follow-Up ($5,000, 2 yrs)	10,000
Willingness to Pay (Outreach)	10,000
Employee Productivity ($5000, 2 yrs, 10 companies)	100,00
Total Revenue	127,500
Cost vs Revenue/Savings	$2,496

Appendix D

Analytic Visuals from MAXDA

Figure D1

Family Code Trends

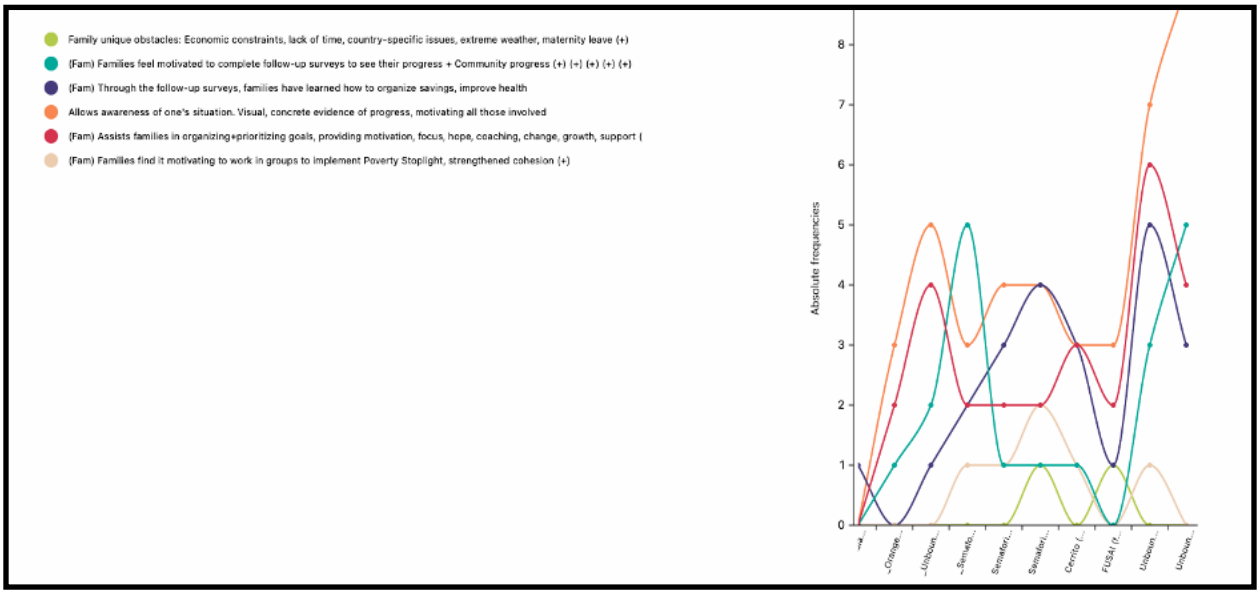


Figure D2

Word Cloud from All Interviews