

IMPROVED HOUSING AND ITS IMPACT ON CHILDREN: AN EXPLORATION OF CEMEX'S PATRIMONIO HOY

By Heather Esper and Ted London



Housing has great potential to positively impact children's lives in a holistic way. This case explores the impacts improved housing has on children from the Base of the Pyramid (BoP)ⁱ and how these impacts can be enhanced. Patrimonio Hoy (PH) is an initiative of CEMEX, a \$15-billion multinational concrete manufacturer. CEMEX launched PH in 1998 to generate additional revenue for its business. PH provides construction materials to low-income consumers through a weekly payment plan that allows its customers to build new homes or expand their existing homes over a period of 70 weeks. We found different types of impacts on children based on whether

ⁱ The BoP—estimated at approximately 4 billion people—is the socio-economic segment that primarily lives in and operates micro-enterprises in the informal economy, and generally has an annual per capita income of less than \$3,000 in purchasing power parity (PPP).

their parents are in the process of saving money and building, or whether their parents have achieved an outcome i.e., a completed building project. While impacts that occur during the saving and building process tend to be negative, we found mostly positive impacts from the additional space and increased financial resources created as a result of a completed building project. We also found that children's aspirations increase after watching their parents' saving and building efforts rewarded. Looking across PH's impacts on other children along its value chain, we found that the children of PH's promoters, distributors, and local staff benefit mainly from the additional income their parents contribute toward their immediate needs. Promoters' children also benefit from the training their parents receive.

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ABOUT THE SERIES

UNICEF states that poverty reduction should start with young children (UNICEF. 2000. Poverty Reduction Begins with Children). The first years of life have a large influence on an individual's long-term well-being. Poverty at an early age can cause lifelong damage to children's future and perpetuate the cycle of poverty across generations. Thus early childhood interventions offer an opportune time to influence the poverty cycle. The effects of poverty can be passed on to children through their parents; improving the well-being of parents therefore can also enhance the well-being of their children.

This series was funded by the Bernard van Leer Foundation, a private philanthropic organization focused on improving the lives of children from birth to age eight. The goal of these cases is to gain a greater understanding of the ways in which businesses in emerging markets impact young children's lives and the potential to optimize impact on children. We also hope that these case studies will influence development and impact investing leaders to include metrics related to young children in their measurement systems.

IN THIS SERIES

IMPROVED HOUSING AND ITS IMPACT ON CHILDREN: AN EXPLORATION OF CEMEX'S PATRIMONIO HOY

Patrimonio Hoy provides construction materials to low-income consumers in Mexico, Nicaragua, Costa Rica, Colombia and the Dominican Republic through a 70-week payment plan that allows its customers to build onto their current homes or build new homes room by room.

IMPROVED SANITATION AND ITS IMPACT ON CHILDREN: AN EXPLORATION OF SANERGY

Sanergy builds 250 USD modular sanitation facilities called Fresh Life Toilets (FLT) in Mukuru, a large slum in Nairobi, Kenya, and sells them to local entrepreneurs for about 588 USD. Franchisees receive business management and operations training and earn revenues by charging customers 0.04-0.06 USD per use.

DIVERSIFIED FARM INCOME, MARKET FACILITATION AND THEIR IMPACT ON CHILDREN: AN EXPLORATION OF HONEY CARE AFRICA

Honey Care Africa (HCA) of Kenya supplies smallholder farmers with beehives and harvest management services. HCA guarantees a market for the beekeeper's honey at fair trade prices, providing a steady source of income.

ACCESS TO CLEAN LIGHTING AND ITS IMPACT ON CHILDREN: AN EXPLORATION OF SOLARAID'S SUNNYMONEY

SunnyMoney sells pico-solar products to BoP communities with limited access to electricity in Tanzania, Malawi, Kenya, and Zambia. It markets the lamps through schools and existing entrepreneur networks.

IMPROVED INCOME STABILITY, TRAINING, MARKET FACILITATION AND THEIR IMPACT ON CHILDREN: AN EXPLORATION OF VILLA ANDINA

Villa Andina of Peru produces high-quality agro-industrial food products through its work with local smallholder farmers. The venture trains farmers in organic cultivation techniques and provides guaranteed payment for the crops produced.

IMPROVED HEALTH CARE AND ITS IMPACT ON CHILDREN: AN EXPLORATION OF PENDA HEALTH

Penda Health provides high-quality, evidence-based, standardized primary care, both curative and preventative, to low- and middle-income families in Kenya while also specializing in women's health care.

BUILDING A SCALABLE BUSINESS WITH SMALL-HOLDER FARMERS IN KENYA: HONEY CARE'S BEEKEEPING MODEL

This teaching case study examines Honey Care Africa's transition from obligating farmers to maintain their own hives to providing hive management services. Readers will explore strategies to reduce side-selling and opportunities to generate greater impacts on farmers' families, in particular young children. The case can be found on GlobalLens.com.

Also included in the series is a summary article, Focusing on the Next Generation: An Exploration of Enterprise Poverty Impacts on Children, that aggregates findings across the above six ventures.

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EXECUTIVE SUMMARY

The home is the foundation for a child's life. It is in the home that children first learn to play, read, study, and imagine what their future will be. A dignified, structurally sound home where a family can gather, talk, eat, rest, share their lives, and find solitude from the outside world is essential to early childhood development.

Shelter is a basic human need. Structurally sound homes with multiple rooms benefit entire families, especially young children. Reduced exposure to elements due to a strong home can improve the health of its inhabitants. Homes with multiple rooms provide children with more space to play and learn. Privacy is ensured and belongings are protected from rain damage and intruders, decreasing stress on parents and children. Added space gives children a secure environment where they can move around and develop as individuals—they can choose to play, study, or just be alone, rather than participate in activities with parents, grandparents, or siblings that do not interest them. The aspirations and expectations children set for their future also expand. After watching their parents work hard to provide a safe, dignified home for the family, children realize that change is possible, and that they too can achieve their goals.

We explore the impacts of improved housing conditions on children ages 0-8 living in the Base of the Pyramid (BoP) by studying the influence of Patrimonio Hoy (henceforth called PH).¹ The BoP—estimated at approximately 4 billion people—is the socio-economic segment that primarily lives and operates micro-enterprises in the informal economy, and generally has an annual per capita income of less than \$3,000 USD in purchasing power parity. PH is an initiative of CEMEX, a \$15-billion multinational concrete manufacturer. Following devaluation of the Mexican peso in 1994, CEMEX, hampered by rising interest rates, saw sales in the formal construction segment fall by 50%. Prompted by the crisis, CEMEX began exploring new ways to generate revenue for its business and identified the highly subsidized low-income housing segment as an area of potential revenue generation. CEMEX launched PH in 1998 to reach low-income customers seeking to build new homes, or enhance their existing homes. Under a weekly payment plan that spans 70 weeks, the program provides construction materials to low-income consumers in BoP regions. PH customers are known as “socios,” the Spanish word for partners—language symbolizing their personal stake in the initiative that offers them the opportunity to add to an existing home or build a new home room by room. The initiative's name, “Patrimonio Hoy” means to create wealth or “patrimony” for future generations and improve the lives today. The organization has reached more than 380,000 Mexican families since its founding.

We holistically explored PH's potential impacts on children across three dimensions of well-being: economic, capability, and relationship. We identified likely impacts through a literature review of low-income housing, discussions with thought leaders, in addition to in-depth interviews and focus groups with PH staff, socios, and promoters, as well as government officials, and non-profit organizations in Guadalajara, Mexico. Both direct impacts on children as well as indirect impacts on children through their parents and the environment were assessed across the stakeholders (see sidebar).

We found that PH has the greatest impacts on its customers' children. Our findings consequently focus mainly on these outcomes. We assess both the impacts of the saving and building process on children, as well as the impacts on children after construction is completed. Although the outcomes we observed on children whose parents completed a building project were mainly positive, some participants in the PH program experienced some negative effects during the saving

Stakeholders

Socios

PH's customers

Promoters

Promoters work part time to attract new socios.

Local Distributors

Distributors supply and deliver building materials to socios.

Local Staff

PH staff members are recruited from the local population.

Broader Community

Individuals who do not have any relationship to PH other than living near PH activities.

process. Within the three areas of well-being we explored, the impacts that seem to have the largest effect on socios' children are summarized in **Table 1**.

Table 1: Substantial Impacts on Children of Socios

<p>Economic Well-Being</p>	<p>Changes in Wealth: Some low-income families sometimes reduce their expenditures on necessities to make their weekly payments to PH e.g., added expenditure leads to a reduction in the quantity or quality of food parents provide for their children. Children are indirectly affected by their parents' increased financial resources after completing a project with PH: some socios use their home for income generating activities. With this new income, socios, especially mothers, often dedicate more resources to their children's needs, including on books, nutrition, school uniforms, and proper clothing.</p> <p>Increased Assets: Many of PH's socios purchase real estate for future generations. The patrimony increases in value from one generation to the next.</p>
<p>Capability Well-Being</p>	<p>Improved Physical Health: Homes with structurally sound concrete floors, walls and roofs reduce exposure to elements that cause illness in children.</p> <p>Enhanced Cognitive Development: As homes are expanded, activities are often assigned to specific rooms. The cognitive development of children is expected to improve as they gain a better sense of the differentiation in their surroundings. The added space also enables children to be alone to develop their own interests and cultivate their individual personalities.</p> <p>Higher Aspirations: Children have higher aspirations after watching their parents' saving and building efforts rewarded. By example, parents teach their children to see opportunities, commit to a project, and overcome challenges. Children also learn that if they set a goal for themselves, they can achieve it.</p> <p>Increased School Achievement: School performance improves when children have a quiet place to focus on their studies. Children who do better in school take pride in their schoolwork, and persist in their studies.</p>
<p>Relationship Well-Being</p>	<p>Changes in Support: Some parents devote more time to building the home themselves or take a second or third job to cover the cost, spending less time with their children. The time spent away from children can influence the quality of parent/child relationships. However, in many of the self-construction cases we examined, many of the older children of socios actually spent more time with their parents because they were either observing or assisting in the building process.</p> <p>Improved Interaction with Parents: Increased space and privacy creates better interaction between parents and children.</p> <p>Closer Relationships with Friends: Additional space and privacy improves children's relationships with their friends. Children who used to be embarrassed about their home are now proud to bring their friends home to study or play.</p>

The experiences of the youngest children in the 0-5 age group differ from those of older children. Impacts on the youngest children are most likely related to their health as a result of general improvements in the home environment as well as possible changes in their nutrition during the saving process. Older children (ages 6-8) are likely to experience additional impacts resulting from increased privacy and gaining space to study.



A PH cell (office) in Zalaitan, Guadalajara.

In addition to socios' children, PH positively impacts the children of promoters, distributors, and local staff. The children of PH's promoters benefit from the additional income their parents contribute toward their immediate needs like food, clothing, and educational opportunities. The communications training their parents receive from PH also improves the lives of these children, leading to reduced tension at home and stronger familial relationships. PH mainly impacts the children of their distributors through the additional job opportunities created within the community. The income provided through these opportunities gives families more flexibility in their spending and added resources to spend on necessities for their children. We also examined through secondary data potential impacts PH may have earlier in its value chain; based on this, we expect CEMEX's practices may result in negative impacts on the environments of children living near cement processing centers.

We leverage these expected impacts to identify opportunities for PH to enhance, deepen, and expand its impacts on young children. We offer recommendations on how PH can decrease its negative impacts and magnify its positive impacts. At the same time, we provide recommendations for how PH can meet the needs of children age eight and under by increasing its penetration in existing markets as well as in new markets.

Key recommendations include:

- **PH should provide additional support through partnerships to reduce some of the potential negative impacts associated with the building process and time commitment of the promoter's job.**
- **PH should research factors that contribute to low socio and promoters retention rate and its impact on their children to develop new strategies to reduce these dropout rates.**
- **PH should gain a better understanding of the impacts on promoters who drop out of the program.**
- **PH should explore providing additional support to socios through partnerships such as access to nutritional supplements and information to educate parents on the nutritional needs of pregnant women and children ages 0-8.**
- **PH should increase flexibility in the payment plan by providing longer breaks, allow lower or higher weekly payments, and/or accept payments on a non-weekly basis.**
- **PH should explore providing child care through partnerships for socios or PH cells for staff.**

Beyond these key recommendations we also offer high-level advice on how PH can assess its effects on children in a systematic and manageable manner.

Note: Since these cases were developed over the course of 2012-2013, a number of our recommendations to enhance positive and mitigate negative impacts for the venture, have been implemented since we visited the venture. As such, please visit the enterprise's website for more information on their latest practices.

COMPANY BACKGROUND

CEMEX: SEEKING NEW MARKETS

The \$15-billion multinational cement manufacturer CEMEX was founded in 1906 with just one cement plant as Cementos Hidalgo. By 2005 it was the world's largest ready-mix concrete producer. The second largest and most-global Mexican company, CEMEX is recognized for its technological capabilities, customer service, and branding expertise. The company has transformed undifferentiated commodities into value-added, premium-priced products under three broad categories.

- **Cement** (Portland grey and white, mortar, pozzolana, oil well)
- **Ready Mix** (Ready-to-pour mixtures of cement, sand, gravel, and water)
- **Related Products** (Crushed stone, sand, gravel, paint, lumber, and electrical supplies)

The company now operates in 50 countries throughout the Americas, Europe, Africa, the Middle East, and Asia. Its trade relationships extend to approximately 102 nations.² CEMEX owns 62 cement plants and 1,997 ready-mix plants with a production capacity of 96 million tons a year, and has more than 46,000 employees. Its 2011 revenues were 15.1 billion USD and its operating margin was 16%.³

THE GENESIS OF PH

Following devaluation of the Mexican peso in 1994, CEMEX, hampered by rising interest rates, saw sales in the formal construction segment fall by 50%. Prompted by the crisis, CEMEX began exploring new ways to generate revenue. The company identified the highly subsidized low-income segment as an area of potential revenue generation. Low-income consumers with government subsidies were less dependent on consumer credit during the crisis, pursuing home improvements relatively unhindered.

CEMEX launched PH in 1998 to reach these consumers. The initiative, which functions as an autonomous unit of CEMEX, has generated some \$50 million in revenue and has received a number of awards and accolades, including the UN Programme's 2006 World Business Award in support of the UN Millennium Development Goals and the 2009 UN Habitat Award for Best Practices in Affordable Housing Solutions.



A PH advertisement outside a PH cell in Guadalajara.

Figure 1: Patrimonio Hoy Areas of Operations



● Indicates countries where PH is located.

LOW-INCOME HOUSING CONSTRAINTS⁴

CEMEX's focus on premium-priced cement sales and production quotas was not applicable to low-income market segments, but its regional distribution networks had the potential to provide a connection to low-income consumers. Based on research and observation of low-income housing markets, CEMEX identified tangible and intangible barriers to home construction within low-income sectors. The tangible barriers

included insufficient access to materials, limited personal savings, inadequate storage for tools and materials, and minimal access to financing. The intangible barriers included, among other items, poor planning skills. Low-income individuals and families who build their own homes often waste up to 30% of their materials due to poor construction practices, theft, and spoilage from exposure to wind and rain.⁵

With little construction knowledge, low-income consumers often rely on local distributors for advice on the type and quantity of construction materials to buy. They generally are guided by distributors'

suggestions, have very little brand loyalty, and seek out the lowest-priced cement. Due to their limited buying power, these consumers often purchase materials in small quantities. Distributors consequently dedicate very few resources to assisting them. Worse, because low-income consumers have little negotiating leverage and lack construction knowledge, distributors often take advantage of these customers, selling them low-quality materials.

“*The first change I see in socios' children is that they look happier and calmer. Because they are calmer they don't fight as much with parents and siblings, and because of that, they start doing better at school. They have better self-esteem, are safer, and are more outgoing.*”

— 58-year-old female promoter who has been a socio for 11 years



Technical advisor meeting with a socio in a PH cell.

Some low-income customers join savings clubs called “tandas” to finance their home construction. The clubs typically consist of approximately 10 members, each of whom pays into a savings pool. At the end of the week, one member, if it is his or her turn to collect, receives the entire sum of the savings from the pool. Only 10% of tanda members actually complete their building projects, with most reporting quitting when resources must be redirected to necessities or emergencies.⁶

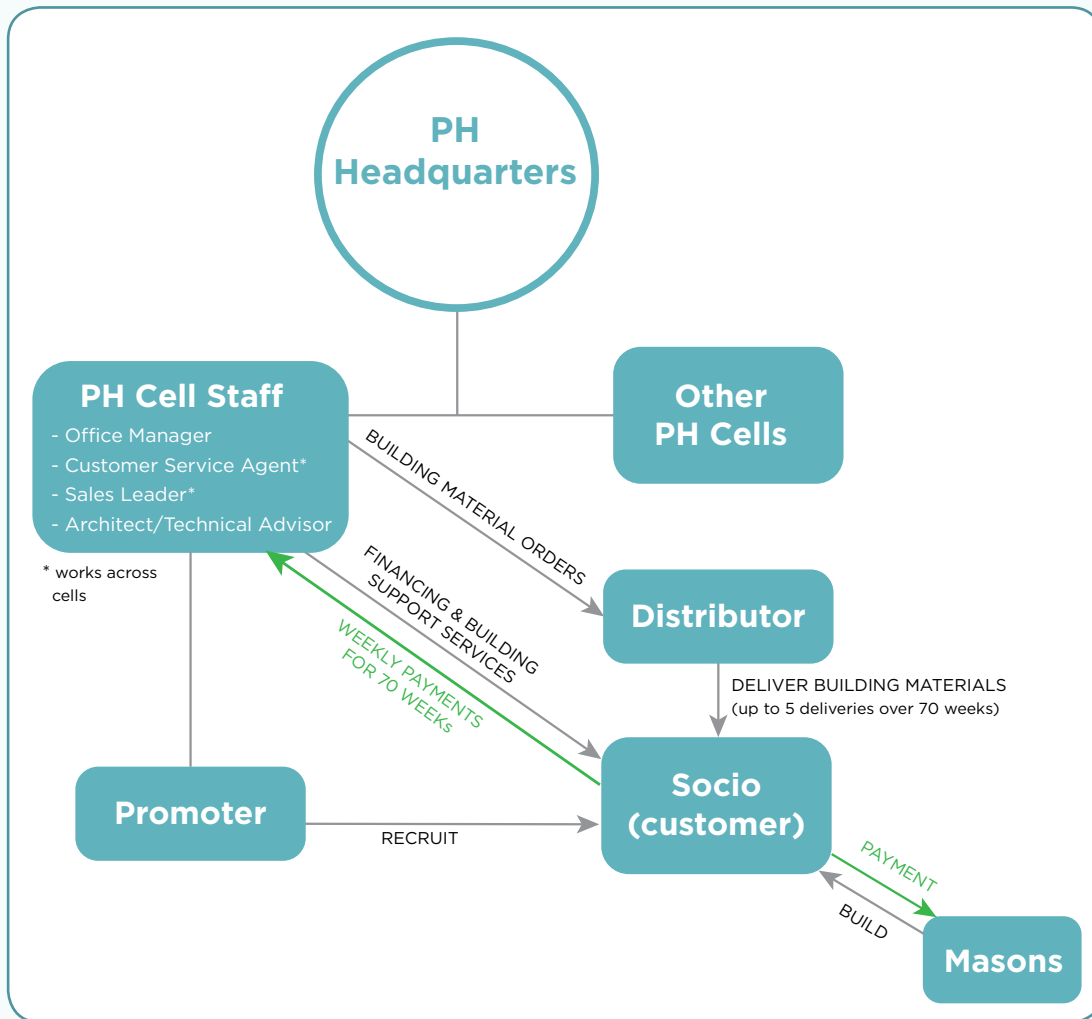
Despite these challenges, CEMEX was prepared to invest in the low-income, do-it-yourself market. It created PH with dual objectives: 1) generate loyalty for CEMEX products, and 2) enhance the quality of life in low-income communities through home construction. PH broke even in 2004, and generated 6.5 million USD in profits from 2008 to 2010. The initiative had its best year in 2011 with 3.5 million USD in profit, and CEMEX was selling an additional 75,000 tons of cement per year through PH.⁷

At the close of 2012, more than 380,000 Mexican families had directly benefited from PH, and the initiative that had improved the living conditions of more than 1.7 million people.⁸ PH had built more than 231,000 rooms (each 9 m²) in participating communities, and distributed more than \$240 million in building credits to customers, while achieving a repayment rate of 98.5%. In addition to Mexico, the initiative has operations in Colombia, Nicaragua, Costa Rica, and the Dominican Republic (see **Figure 1**).

PH BUSINESS MODEL

Low-income consumers go to PH when they want to build a new home, an additional room, a fence, or a roof. Leveraging CEMEX’s distribution networks, and managing its own relationships within these networks, PH sells building materials and finishing products to these customers with the stipulation that the materials cannot be resold. PH also provides the financing and technical advice its socios (partners) need to complete their home construction projects (see **Figure 2**). Using this business model, CEMEX nets the same margin per bag of cement sold. The distributors accept the lower margin because PH consistently generates a steady stream of low-income consumers.

Figure 2: PH Business Model



Organizational Structure

CELLS

PH operates from its headquarters in Guadalajara, Mexico. By October 2011, the initiative had over 100 offices, known as cells, throughout Mexico, Colombia, Costa Rica, Nicaragua, and the Dominican Republic. The cells are placed in marginalized areas with populations that exceed 50,000 people, have a “do-it-yourself” attitude toward construction projects, and have average household incomes of 850-2,500 pesosⁱⁱ per week.

Each cell is independent, and 98% of PH’s cells are self-sustaining. With a sales goal of reaching at least 450 families, most cells are expected to break even within 18 months. Because building materials and techniques vary by region, cells are customized; however, cells share best practices and stay connected through PH’s management information system.

ⁱⁱ This is equivalent to 66-194 USD per week as of June, 2013).

Cells are PH's local presence in communities. Their functions include:

- **Recruiting promoters (market PH to the community)**
- **Recruiting new socios (customers)**
- **Planning, designing, and scheduling socio projects**
- **Collecting socios' weekly payments**
- **Coordinating distributor deliveries**
- **Responding to socio inquiries**

CELL STAFF

Each cell has an office manager and an architect, who serves as a technical advisor. Sales leaders and customer service agents work across cells, but only cells of 450 or more socios have their own customer service agents. Few cell staff members have college degrees (office managers and architects have degrees), are recruited from the local population, and are expected to be familiar with the local community.

PH currently employs 29 sales leaders, who work across an average of three cells each. In addition to managing the commercial side of PH, sales leaders manage coordinators, and are responsible for training and paying promoters. Coordinators recruit and organize groups of free-lance promoters. Many of PH's current coordinators were once promoters.

An office manager oversees the cell staff, payments, and deliveries of construction materials to socios. The office manager is also responsible for the performance of the cell, which is measured against annual targets in new customer sales, socio retention, renewal rates, default ratios, and promoter productivity.

Like sales leaders, customer service agents work across multiple cells. Customer service agents address socio complaints and service quality issues, as well as provide new staff introductions and training (with the exception of promoter training).

PROMOTERS

Promoters work part-time to attract new socios. Ninety-five percent of PH's promoters are women and 51% have no prior work experience. Coordinators assign promoters weekly goals for socio attraction



Box 1: A Pregnant Woman's Perspective*

Ana and Roberto are excited to have a son whom they will name Victor. They have been living with Ana's mother and father. Ana's mother, Maria, and her husband, Timoteo, built their house over 10 years ago with the assistance of PH, and now have a four-bedroom home with a living room and dining area. Maria also has been a promoter for PH for eight years, heading up information sessions with local women to explain that building a home that they can be proud of is not out of reach with the assistance of PH. She has helped many families build new homes or expand their existing homes through PH. She and Timoteo began working with PH to build a home for their daughter two years ago, and it is almost complete. With the help of PH, friends and family, Ana and Roberto will soon move to their own two-bedroom house with a kitchen and living room. When the baby arrives in seven months, he will have his own nursery.

** This fictional account is provided to represent a common PH stakeholder situation. The narrative sketch is based on information collected during interviews and focus groups.*



A socio in the kitchen she built through PH; she is saving to plaster the walls and tile the floor.

and retention within a specified zone. Promoters receive payment for every new socio they sign up, and for every week the socios remain enrolled in the program. Each promoter makes a weekly commitment to his or her personal attraction and retention objectives in collaboration with a sales leader and coordinator.

A group of promoters hold daily information sessions to recruit socios. The promoters canvas a neighborhood by car, announcing sessions through a public address system, or by foot, walking door-to-door to distribute flyers with the sessions' time and location. They also advertise in places where women tend to gather, such as tortilla shops, churches, flea markets, and the social security office. The promoters hold the information sessions for groups of 10 or less at a central location, ideally at the home of an influential community member who has worked with PH.

During the sessions, promoters talk with potential socios individually, and then deliver an interactive presentation to the group. Promoters use a large packet of pre-printed plastic sheets to discuss the initiative's benefits, payment plan, and requirements. PH is working to grow its number of promoters from its current 410 to 700, however, turnover is common—most promoters work with PH for an average of 36 months. The initiative gains about 40 new promoters every month, about the same number of promoters it loses.

DISTRIBUTORS

PH works with CEMEX's distributor network, selecting distributors based on their knowledge of the local cement market, and their commitment to the community. Depending on the distributor's size and the community's demand, the additional clientele can generate anywhere from 5% to 50% of a distributor's cement sales. In Mexico, PH has approximately 150 distributors, with an average of two distributors providing services to socios within a single cell's territory. Distributors are local, and tend to do business in different parts of the city, with larger distributors often having multiple outlets throughout a city. PH works with its distributors to encourage competition, good customer service, adequate stock, and timely delivery of materials.

Process

DESIGN

When a socio registers with PH, s/he schedules a meeting with the cell's technical advisor. During the meeting, the socio draws what s/he wants to build on a piece of paper. The technical advisor then discusses the drawing with the socio, and sketches a few options for the final design. The socio then takes the sketches home to discuss the designs with family. Once a design is chosen, the socio meets with the technical advisor for a consultation. During the consultation, the technical advisor draws a final plan and provides recommendations on the sequence of building activities as well as the type and quantity of building material that will be necessary to complete the project.

Any office consultation with the technical advisor after this stage costs 219 pesos. Socios who have already completed a project with PH are entitled to a free home visit from the architect on their next project with the initiative; otherwise it costs 230 pesos for a home visit.

FINANCING SERVICES

PH uses a “pay-as-you-go” business model under which its customers make weekly payments to PH in exchange for their building materials. A socio's weekly payment includes a 50 peso membership fee with 190 pesos going toward materials, which cost 13,300 pesos over the 70 week program.ⁱⁱⁱ The weekly fee covers the cost for enough building materials to build a 9 m² room with a foundation, brick walls, a ceiling, and finishing products, not including windows or doors. The membership fee pays for PH's consulting and architectural services, the operating costs of the local branches, home delivery of materials, and a 15% annual finance charge on materials.

After week 36, socios who have made regular payments, become eligible to join the Te Impulsa program. Te Impulsa was introduced in 2002 to recognize good payers and enable them to receive materials and build more quickly. The program was created to encourage socios to stay with the initiative and finish their building project. In 2010, 15% of all socios participated in the Te Impulsa program.

PH also works with socios through Mexican government subsidy programs *Esta es tu Casa* (This is your House) and *Comision Nacional de Vivienda* (National Council for Housing). Under these programs, the government offers homebuilding subsidies to accelerate new home construction to citizens who have already saved at least 5% of their project. To qualify for a subsidy, clients must use credit to pay for home construction, have not received a government housing subsidy before, and must have daily household income less than 20 USD.

PH helps families prepare their applications for the government's review. If approved, the family receives a subsidy that pays for 70% of each weekly payment. PH delivers materials as opposed to the cash most companies working with the subsidy programs provide. By 2011, some 81,000 PH families had benefited from the *Esta es tu Casa* program.

DISTRIBUTION

As socios make weekly payments, PH places orders and makes payments to local CEMEX distributors for building supplies. The distributor buys cement from CEMEX and through contracts with other providers for the remaining building materials, which are then delivered to PH's socios. Cement accounts for 30% of socios' purchases. The remainder is spent on other building materials, such as steel, sand, gravel, bricks, and finishing products.

PH encourages its distributors to sell CEMEX cement exclusively and sales from its socios often account for 30% of their sales volume. With no additional marketing requirement, some distributors see their cement sales double or triple due to the increased demand generated by PH socios.

ⁱⁱⁱ 100 pesos = 7.75 USD as of June, 2013.

Over the course of 70 weeks, the socios can request a maximum of five deliveries. After five weeks, socios receive their first delivery, the equivalent of 10 weekly payments. Socios are in the credit phase approximately 80% of the time, with PH providing building materials up front. Socios can choose to receive a delivery right away or take a voucher. The voucher allows socios to reserve their materials at distributors' warehouses until they are ready to begin construction. Once a socio is ready to build, PH coordinates the deliveries from the distributor to the socio. If socios leave the program, they do not get their money back; instead, they receive their savings back in the form of building materials.

BUILDING PROCESS

Once socios complete their 70 week payment plan and receive all their building materials, many pause working with PH to save money to hire someone to help them build. Socios stay with the program for an average of 22 of the 70 weeks. Some socios leave the program early because their projects do not require a full 70 weeks' participation. However, the majority who leave typically are not able to make their payments due to unexpected expenses or job loss. About 50% of socios complete their projects, while 30% subscribe to the program a second time. To accommodate the variation in individual client needs, PH introduced its *Receso* (break) program, which allows a socio to take up to eight weeks in breaks from

making payments without penalty. Socios can divide these weeks into up to four two-week breaks during the 70 week program.

“*Before I had only two rooms. Now I also have two rooms upstairs that are finished with floor tiles and plastered walls. I have done about six projects with PH, and each project takes a year to a year and a half. I have been getting a subsidy from the government. The subsidy allowed me to put floor tiles in the back two rooms, and is the reason I have boxes of cement at the front door. I am almost finished with the new room in the front of the house that is now serving as the kitchen. I don't want to stop until I have everything.*”

— 40-year-old female socio

COMPETITION

Most of CEMEX's competitors have a traditional approach to the self-construction market. The Holcim Apasco program, which was called *Mi Casa* (My House), has distribution sites within local communities and trains its distributors to provide building advice to low-income customers. From 2000 to 2008, the program contributed to the construction and improvement of approximately 250,000 homes across Mexico.⁹

Microfinance institutions such as *Compartamos Banco* and *Financiera Independencia* recently entered the low-income market with new home

construction loans. These loans, which range from 200-30,000 USD, are issued to individuals with stable credit histories.¹⁰ The microfinance institutions have increased the overall demand for building materials by providing low-income families with access to credit. Larger companies typically do not directly compete with PH for customers because of their inexperience with the low-income consumer segment and the self-construction market. PH remains competitive by building trust-based relationships in the communities it serves. It is difficult for others to copy PH's business model; without an existing distribution infrastructure, entry into these markets can be expensive.

Box 2: Portrait of PH's BOP Market

In 2007, PH conducted market research to better understand the characteristics of the typical socio. The research found that the majority of socios live in a one-room home with five other people.¹¹ The single room serves as a place to cook, study, play, wash, and sleep. Bathrooms are usually located outside.¹² The average socio is a married woman who is approximately 40 years old and has completed some secondary schooling. In the majority of households, husbands and wives collaboratively make the household decisions.¹³ (See **Table 9** in **Appendix A** for more detailed information regarding socio demographic information.)

“ Before we started with PH we had a hard time because we had a very tight space. The foundation had a problem—it was only 20 cm and it’s supposed to be 80 cm. I had to knock it all over and start building it again.”

About half of PH socios do not have stable jobs and reported a monthly family income of less than four minimum wages.^{iv} The majority of socios are paid weekly. Many socios also face financial constraints because they have over-borrowed—about 23% of socios have loans out for household appliances. (See **Table 10** in **Appendix A** for more detailed information on socio income.)

Through our interviews with PH stakeholders, we learned that a typical PH socio is someone who owns land and lives in a structure with laminate ceilings. The foundations of many socios’ homes are not stable. When they begin working with PH, many socios must tear out the foundation and build a new one. After the foundation is complete, they build the home’s walls, and then move on to building a second floor.¹⁴ “Before we started with PH we had a hard time because we had a very tight space. The foundation had a problem—it was only 20cm and it’s supposed to be 80cm. I had to knock it all over and start building it again,” said a 37-year-old male socio who had been with PH for 14 years.

iv Minimum wage for the state of Jalisco, Mexico as of January 1, 2010 was 57.46 pesos (just over four dollars).



Promoters home built through PH.

FOCUSING ON IMPACTS ON CHILDREN AGE EIGHT AND UNDER

FRAMEWORK AND METHODOLOGY

The BoP Impact Assessment Framework (BoP IAF) provides a structured approach for gaining a holistic understanding of an enterprise's impacts on key BoP stakeholders. It assesses how BoP stakeholders are impacted across three areas of well-being: economic, capability, and relationship. We customized the BoP IAF to analyze PH's potential impacts within each area of well-being on children along PH's value chain, including the children of socios, promoters, distributors, and cell staff as well as children in the broader community.

We also adapted the framework to explore both direct and indirect impacts on these children (see **Figure 3**). Direct impacts are those impacts that directly result from PH on children, and indirect impacts are those impacts that occur on children as a result of a direct impact from PH on their caregivers, another adult, or the environment.

Figure 3: Direct and Indirect Impacts on Children



The customized set of potential impacts we explored across the BoP IAF's three areas of well-being:

- **Economic Well-Being:** These are mainly impacts that result from changes in a caregiver's wealth (income and savings) and economic stability (expenditures and employment) that create changes in assets and resources provided to children.
- **Capability Well-Being:** These impacts affect children directly as well as indirectly through direct impacts on their caregivers. Impacts within this area of well-being include changes in the child's physical health, psychological health, leisure time, aspirations, skills, education, and knowledge.
- **Relationship Well-Being:** These impacts affect children both directly and indirectly through direct impacts on their caregivers. The impacts include changes in the types of interactions and support children receive from adults and other children in the community as well as changes to their social network. They also include changes in the home and local environment.

To gain an initial understanding of PH's influence on young children, we conducted a literature review of low-income housing and interviewed thought leaders about different types of impacts that occur on children as a result of gaining improved housing. To gain a holistic sense of PH's impacts on children age eight and under, across the three areas of well-being, and to verify, enrich, and identify additional impacts, we conducted in-depth qualitative interviews and focus groups with key PH stakeholders in Guadalajara, Mexico.

Interviews were conducted with people directly impacted by the venture—such as PH's socios and promoters as well as those employed by PH at local offices and PH headquarters. We also interviewed people who were aware of the venture, but had not been impacted by it, such as non-participants and external organizations that had experience of working with children in the 0-8 age group. The interviews were semi-structured conversations comprised of a standardized set of open-ended questions that allowed us to ask follow-up questions to elicit more detail. We used follow-up questions such as: "Is there



A focus group with promoters at a PH cell.

anything else related to this topic that you haven't shared with us yet?" This encouraged interviewees (see **Table 2** for a list of respondents) to share additional information. We also incorporated insights from earlier interviews in later interviews to develop a more refined understanding of impacts. Each interviewee received a small thank you gift for their time.^v

Table 2: Description of Primary Interview Respondents

Type of Respondent	Number of Individuals
Socios	19 ^a
Promoters	11 ^b
PH Staff	6 ^c
External Organizations	7 ^d
Non-participants	2

^a Includes three interviews with socios, one focus group with six socios, and 10 promoters who shared their experiences as socios with us.

^b Includes four interviews with promoters and one focus group with seven promoters.

^c Includes three interviews with PH headquarters staff and three interviews with local cell staff including an interview with a customer service agent, an architect, and an office manager.

^d Includes interviews with stakeholders at three non-profit organizations, three schools, and one government organization.

Methodological Limitations

It is important to note that our evaluation of PH's impacts on children age eight and under is qualitative rather than quantitative. Our findings are interpreted from the qualitative evidence we collected.

^v Before the field visit, we asked PH staff for their advice on culturally appropriate gifts. They agreed it would be best to give external stakeholders a metal pen with a WDI logo and all other stakeholders a plastic pen with a WDI logo.

Therefore our findings consist of likely outcomes of PH on its socios', promoters', distributors', cell staffs' children and children in the broader community. The methodology used in this study does not allow us to substantiate the impacts beyond attributing them to the respondents. Some of our findings may also suffer from recall inaccuracy since we did not measure all impacts at the exact time of occurrence.

We informed PH of the different types of stakeholders we would like to interview and relied on PH to select interviewees. Our sampling consequently may be biased to those who had more time in their schedules or felt strongly about sharing information about PH. We were not able to interview any socios who dropped out of the PH program because PH does not track former socios.

This study methodology was adapted from a well-developed approach that has been implemented in Africa, Asia, and Latin America. The adapted methodology was designed to present findings from interviews and focus groups with the objective of demonstrating the value of collecting such impact data in more rigorous ways over time. The Capturing Impacts section that follows demonstrates how to measure the most substantial impacts rigorously in order to quantify them.

IMPACT FINDINGS

The focus of the Impact section that follows is to identify likely impacts on PH's stakeholders' children. The degree to which PH impacts children differs based on their parents' relationship with PH.

Table 3 summarizes direct and indirect impacts on the children of all PH's stakeholders that we observed on our field visit. Impacts in bold font are explored in detail in the next section, while details of non-bolded impacts can be found in **Appendices B-F**.



This ice cream shop is the first room one socio built. The room is now being rented out as an ice cream store front.

Table 3: Summary of Impacts on Children Age Eight and Under Across PH Stakeholders.

	Economic Well-Being	Capability Well-Being	Relationship Well-Being
Customers' Children: Process	<p>Wealth</p> <ul style="list-style-type: none"> • Reduced financial resources available for child's well-being due to parents' decreased financial resources resulting from the program's weekly payments (Indirect) 	<p>Physical Health</p> <ul style="list-style-type: none"> • Increased risk of injury due to proximity to construction site (Direct) <p>Education/Knowledge</p> <ul style="list-style-type: none"> • Increased knowledge about construction and masonry through observation of their parents' skills in self-construction, as well as through participation in these activities. Children also learn how to save money by observing their parents' improved savings skills (Direct) <p>Leisure Time</p> <ul style="list-style-type: none"> • Reduced free time due to increased responsibility: older children are expected to take on more responsibility at home as parents take on additional jobs or build the home (Direct) 	<p>Support</p> <ul style="list-style-type: none"> • Decreased time for parents and children to spend together due to parents' increased employment to make weekly payments or parents spending more time on self-construction activities (Indirect)
Customers' Children: Outcome	<p>Wealth</p> <ul style="list-style-type: none"> • Increased financial resources available for child's well-being available due to parents' increased financial resources from income generating activities associated with completing a building project (Indirect) • Increased financial resources available for child's well-being as a result of parents' decreased expenditures associated with building completion (Indirect) • Increased financial resources available for child's well-being related to parents' increased savings (Indirect) 	<p>Physical Health</p> <ul style="list-style-type: none"> • Reduced illness due to safer home (Direct) • Reduced injuries due to safer home (Direct) • Improved child health through parents' improved health (Indirect) <p>Psychological Health</p> <ul style="list-style-type: none"> • Enhanced cognitive development due to increased space (Direct) • Increased self-esteem due to increased privacy (Indirect) <p>Education/Knowledge</p> <ul style="list-style-type: none"> • Increased school achievement due to increased space (Direct) <p>Aspirations</p> <ul style="list-style-type: none"> • Children develop higher aspirations for their future due to changes in parents' expectations in life (Indirect) 	<p>Interactions</p> <ul style="list-style-type: none"> • Improved child-parent interactions due to increased space at home (Direct) <p>Support</p> <ul style="list-style-type: none"> • Closer relationships with family members due to increased space (Direct) • Closer relationships with friends due to improved home (Direct) • Children receive more support from their parents when their parents are less stressed (Indirect) • Closer relationships with parents related to parents spending less time repairing and cleaning the home and reduced parental stress associated with financial state (Indirect) <p>Adaptability in School</p> <ul style="list-style-type: none"> • Easier assimilation into school environment as a result of gaining an improved home (Direct) <p>Local Environment</p> <ul style="list-style-type: none"> • Increased security from gaining a more secure home (Direct)

Note: Impacts that are likely to have the largest impact on children are bolded. Bolded impacts are explained in more detail in the following sections whereas explanations of non-bolded impacts can be found in Appendices B-F.

	Economic Well-Being	Capability Well-Being	Relationship Well-Being
Promoters' Children	<p>Wealth</p> <ul style="list-style-type: none"> Increased financial resources available for child's well-being due to parents' increased income (Indirect) 	<p>Psychological Health</p> <ul style="list-style-type: none"> Increased self-esteem as a result of parents' increased self-esteem (Indirect) 	<p>Interactions</p> <ul style="list-style-type: none"> Children experience better interactions with their parents when their parents experience less stress and tension (Indirect) <p>Support</p> <ul style="list-style-type: none"> Increased social capital from parent's increased social network results in increased resources for children (Indirect)
Children from the Community	<p>Wealth</p> <ul style="list-style-type: none"> Increased financial resources available for child's well-being as a result of promoters extended families starting to work at PH (Indirect) 	<p>Physical Health</p> <ul style="list-style-type: none"> Reduced illness and injury in children who play at a PH house (Direct) <p>Psychological Health</p> <ul style="list-style-type: none"> Increased jealousy of friends' PH homes (Direct) <p>Aspirations</p> <ul style="list-style-type: none"> Increased aspirations from living near dignified housing (Direct) Improved aspirations for the future as young children see promoters as role models (Direct) 	<p>Local Environment</p> <ul style="list-style-type: none"> Decreased quality of environment for children living near plants that PH sources materials from (Direct)
Children of PH's BoP Staff	<p>Wealth</p> <ul style="list-style-type: none"> Increased financial resources available for child's well-being due to parents' stable job (Indirect) 		<p>Support</p> <ul style="list-style-type: none"> Increased social capital from parent's increased social network results in increased resources for children (Indirect)
Children of Distributors' BoP Staff	<p>Wealth</p> <ul style="list-style-type: none"> Increased financial resources available for child's well-being due to parents' increased income (Indirect) 		

Note: Impacts that are likely to have the largest impact on children are bolded. Bolded impacts are explained in more detail in the following sections whereas explanations of non-bolded impacts can be found in Appendices B-F.

Impacts on Socio Children

During our interviews and focus groups it became clear that different types of impacts occur on children based on whether their parents are in the process of saving money and building with PH or whether their parents had achieved an outcome—completed a building project with PH.

PROCESS: IMPACTS OF SAVING AND BUILDING

We observed both direct and indirect impacts that occur during the process of saving and building with PH on the children of socios age eight and under.

ECONOMIC WELL-BEING

Indirect Impacts

Wealth: Reduced financial resources available for child's well-being due to parent's decreased financial resources resulting from the program's weekly payments.

Children are indirectly impacted by the saving process as their parents allocate a significant percentage of their income to make weekly payments to PH.

“Right now it’s a little difficult—you either pay the rent or PH,” said a 24-year-old female socio. “It’s easier for me because I have more access to government assistance and services.”

This financial constraint reduces parents’ flexibility to purchase resources for children, such as school supplies and clothing. Children seem to be particularly sensitive to the effects of income poverty in early childhood. In fact, income has been found to be a significant predictor of children’s performance on measures of ability in early childhood.¹⁵

Nevertheless, not all children are impacted in the same way. In some instances, socios’ ability to provide resources to their children is not affected. They take additional jobs to make the weekly payments, and some parents earn enough from their current jobs to make the weekly payments and maintain a similar level of spending on household necessities.¹⁶

The health of children is indirectly impacted by their parents’ added financial commitment. During the saving and building process, some socios may alter their children’s typical diet. One client said that in order to make her weekly payments, she fed her children meat twice week, rather than thrice.¹⁷ Another said, she fed her granddaughter beans in place of animal-based proteins during the building process.¹⁸

Box 3: Effects of Undernutrition

The effect of undernutrition on young children (ages 0-8), especially those younger than age five, is troubling. It can impede behavioral and cognitive development, educability, and reproductive health, and undermine future work productivity. Pregnant socios who reduce their food intake during the building process risk negatively affecting the health of their unborn child. Growth failure occurs almost exclusively during the intrauterine period and in the first two years of life. Nutrition during the first years of life can have a profound effect on children’s health, as well as their ability to learn, communicate, think analytically, socialize effectively, and adapt to new environments and people. Good nutrition is the first line of defense against a number of childhood diseases that can impact a child for life. Poor nutrition during intrauterine life and early years leads to effects such as delayed physical growth and motor development, reduced cognitive development resulting in lower IQs (lower by 15 points or more in the severely malnourished), increased behavioral problems and deficiencies in social skills at school age, and decreased attention and learning. The effects are not found just in the severely malnourished. Impacts of undernutrition on cognitive development occur in children without clinical signs of undernutrition.¹⁹

“When I was younger, five of us would sleep in one bed and we used to go to school barefoot. Because my parents had to pay rent, they didn’t have the money to give us proper clothing. Now I can give things to my son that they couldn’t give me—I can feed him and clothe him.”

— 29-year-old male socio

relationships with their parents may be reduced. Neurological evidence suggests that the social environment significantly affects the physical development of the brain, and that early childhood experiences can have a permanent impact on social and emotional development. The development of social and emotional skills in early childhood is critical to an individual’s general well-being as well as future performance in school or the labor force.²¹ It is likely that this affects the development of younger children (ages 0-5) more than older children (ages 6-8).

OUTCOME: IMPACT OF COMPLETED BUILDING PROJECT

Building with PH is an ongoing process for many socios—they build a home room by room over the course of several years. The impacts on socios’ children are distributed across all three areas of well-being. The

impacts on the youngest children, those less than five years of age, are likely to be more related to improvements in the home environment. On the other hand, older children, those ages 6-8, are likely to have additional impacts that occur from gaining privacy and being able to concentrate and study.

Box 4: A Child’s Perspective*

Maricela is seven years old and has a five-year-old brother, Felipe. They share a one-room home with her parents, Francisco and Ibbie, which the family has long outgrown. Francisco and Ibbie are working hard with family members to complete a three-bedroom home with the assistance of PH. Maricela says that when the new rooms are completed, she will invite her friends over to play. She doesn’t usually bring her friends over because they like to have their own space to play, away from Felipe and her parents. Maricela also has a hard time finding a quiet place to read or do her homework due to the lack of space and all the noise from the construction. She is excited that she will have her own room to study, read, and write.

* This fictional account is provided to represent a common PH stakeholder situation. The narrative sketch is based on information collected during interviews and focus groups.

RELATIONSHIP WELL-BEING

Indirect Impact

Support: Decreased time for parents and children to spend time together due to parents’ increased employment to make weekly payments or parents spending more time on self-construction activities

Not all socios decide to build their projects themselves or take a new job to make the PH payments, but for those who do, they often do not have as much time to spend with their children or spouse.²⁰

As a result, the quality of children’s

ECONOMIC WELL-BEING

Indirect Impacts

Wealth: Increased financial resources available for child’s well-being due to increased financial resources from income generating activities associated with completing a building project

Socios can increase their financial resources when they use a room or home they built with PH to generate additional income by starting a business, renting a room, or renting a home. One socio said that his brother uses their kitchen to make tacos to sell.²² Another socio rents the home she built with PH so that she can continue to expand the house and eventually move her entire family in,²³ while other socios choose to rent their old home.²⁴ Research shows a positive association between stocks of wealth ownership and school enrollment, attendance, and completion. In many developing countries elementary school attendance requires the child to wear a uniform, which limits attendance to those who have the financial resources to purchase uniforms. The additional financial resources allow parents to provide their children with more food and higher quality foods.²⁵ Increases in financial

resources for low-income families are also linked to increased likelihood that children will have access to healthcare.²⁶

Wealth: Increased financial resources available for child's well-being as a result of parents decreased expenditures associated with building completion

Socios' expenditures are expected to decrease after they finish their weekly payments with PH. Having a durable home that is protected from the elements also often eliminates the need to replace furniture and other items that can be destroyed by exposure to the weather in poorly maintained rental properties,

deteriorating homes, or poorly constructed dwellings. A socio who is a mechanic, for example, significantly reduced the amount he was spending on parts once he finished adding walls to the covering, because his auto parts were no longer rusting.²⁷ Socios who used to rent before building a home with PH, no longer have to pay rent.²⁸ Socios also build their credit through their work with PH: those who successfully complete 70

“It's nice to not have to pay rent—that money just goes away. It's even sad because all the sacrifices you make, and then you never see the money.”³⁰

— Socio

weeks with PH receive a letter of recommendation to assist them with establishing credit,²⁹ and obtaining lower interest rates with vendors and financial institutions.

Wealth: Increased financial resources available for child's well-being due to parents' increased savings

The completed house is an asset in the form of savings that socios can pass down to their children. Many of PH's socios purchase real estate for future generations. The patrimony increases in value from one generation to the next.

CAPABILITY WELL-BEING

Direct Impacts

Physical Health: Reduced illness due to safer home

The design of a child's physical environment can cause or prevent illness. Conditions such as obesity, asthma, and lead poisoning as well as injuries are associated with risk factors related to the built environment. Asthma is the most common chronic childhood disease, occurring in approximately 54 of every 1,000 children. Environmental triggers within the home include allergens from mold, dust mites, cockroaches, and pets; indoor air pollutants such as tobacco smoke; volatile organic compounds; and combustion by-products. Outdoor triggers include respiratory irritant air pollutants such as ground-level ozone and particulate matter, allergens, and dust. Low-income children are more likely to be exposed to structural hazards in the home and are more likely to have diseases such as lead poisoning and asthma. Common causes include living in poorly maintained rental communities and living in poorly designed home, or homes constructed of poor quality materials. Thoughtful community and neighborhood design can mitigate these risk factors and promote health in children eight and under.³¹

Homes with structurally sound concrete floors, walls, and roofs reduce exposure to weather and mold in children age 8 and under. This is in sharp contrast to the poorly maintained rental properties, homes with dirt floors, and laminate roofs and ceilings many socios reside in prior to their work with the initiative. With improvements in the built environment, children's exposure to mosquitoes, flies, mice, snakes, and scorpions also decreases.³² Disease, such as asthma or chronic colds, accidents, and poisonings are ameliorated.³³ In particular, the reduced exposure to the elements is likely to make a large difference in the health of the younger children (ages 0-5) due to weaker immune systems than older children. One socio said that while living in a cold, damp environment before joining PH, her granddaughter got pneumonia when she was two weeks old and had to be hospitalized.³⁴



A bathroom and two bedrooms built through Patrimonio Hoy.

When families rent, they frequently share a bathroom outside the home with others. Once the bathroom moves inside the home, there are improvements to children's health.³⁵ The impact is even more significant for families that go to the bathroom on open land. Children many times accidentally dig up these holes when playing outside.³⁶ The incidence of diarrhea, for example, is reduced, as are parasitic diseases, E. coli, and other bacterial infections, when contact with human or animal waste is reduced or mitigated.

Psychological Health: Enhanced cognitive development due to increased space

As a home gains more space, activities can be assigned to specific places. The cognitive development of children is enhanced as children gain a better understanding of the differentiation in their surroundings.³⁷ Additional rooms contribute to early childhood learning and development by providing children with enough space to develop their own interests, and grow as individuals. For example, one socio said her grandson can play in the garage with toy horses while her granddaughter plays on the deck.³⁸

Education/Knowledge: Increased school achievement due to increased space

With the addition of space, children can find a quiet place to complete studies. Children's motivation for school can increase due to having quiet space to focus on schoolwork.³⁹ For instance, it is difficult

to study in a one-room home if the television is on and everyone else is paying attention to it. One socio said that, before she joined PH, her children were not sure they wanted to continue with their studies, but afterward they were motivated to persist.⁴⁰ Mood improvements are seen when children are able to exert more control over their environment. This impact is likely to affect older children, those ages 6-8, as opposed to younger children, who are not attending school.

“ Before we lived in a laminated room and one time the wind took away the ceiling and all our belongings got wet. Before life was very sad, it was very tough, and we would go through hard times when it would get cold and rainy. I thank God that at least today I don't get wet.”

— 46-year-old female promoter, who started with PH as a socio 10 years ago

“Having an assigned space to do work and homework and a clean space, changes how children see themselves,” said a 58-year-old female promoter. “As a result, they get motivated ... they will pass that mentality on to their kids.”

Indirect Impacts

Aspirations: Children develop higher aspirations for their future due to changes in parents' expectations in life

Israel Moreno, director of PH, explained that the mentality of low-income consumers before PH tends to be, “we cannot do it—we cannot have a better life. This is my life, this has been my parents' life, and this will be my children's life.”⁴¹ Even if they have the money to improve their home, they don't know how.

Instead, they buy material goods for immediate enjoyment, or spend the money on their daughter's 15th birthday (a major celebration in Mexico). They often do not look for benefits that will be realized in the future.⁴² Children's outlook on life can change as a result of observing their parents' saving and building efforts being rewarded.⁴³ Instead of passing defeatist thinking down to their children, socios teach their children to see opportunities, to commit to a

“*My kids have seen that I can build my own house so they have learned from my example. This teaches the kids that if one has a goal, they can achieve it.*”

— 43-year-old female socio, who has been with PH for 11 years

project, and overcome challenges.⁴⁴ Older children's (those ages 6-8) aspirations are more likely to be affected whereas their younger siblings may not have enough awareness for the same level of impact to occur.

A safe, structurally sound home allows families to cultivate new hope and aspirations—they begin to leave their old way of life behind.⁴⁵ This change continues as children grow.⁴⁶ One socio said: “every time we do something in the house, she (her granddaughter) gets more motivated to continue with her studies and to have a better life—she wants to go to university and get a job.”⁴⁷

RELATIONSHIP WELL-BEING

Direct Impacts

Interactions: Improved child-parent interactions due to increased space at home

A direct impact of gaining more space is that parents and children have improved interactions. Instead of getting upset with a child, parents can send the child to a different room to play.⁴⁸ As activities are

assigned to specific rooms within the home, parents are also able to create a sense of structure and consistency for children. Children are better able to cognitively separate among rooms and times for activities, such as studies, games, eating, and television.

“*I am able to pay more attention to my kid. I was worried when I was building the house that I couldn't spend as much time with my child and wife. But now I am more focused and spend more time with my child.*”

—29-year-old male who has been a socio for 11 years

Support: Closer relationships with family members due to increased space

The increase in privacy that extra space in the house provides allows children to have closer relationships with their family members. This is supported by earlier

work by PH, in which the initiative found that the increase in privacy allows parents and children, such as mothers and daughters or fathers and sons, to have conversations they might not have had if others were present.⁴⁹ Although socios tend to build new homes so they can live with only their immediate families, it



A socio's granddaughter studying in her bedroom.

seems that when socios add rooms to their homes, the new space also attracts more people who want to spend time there or even live there. This allows close relationships to develop that may not have existed otherwise. One of the socios we met watches her grandchildren during the day at her house, something she could not have done before she added rooms to her home with PH.⁵⁰ As a result, she has better relationships with her grandchildren. Another PH client now has her granddaughter living with her.⁵¹

The quality of children's relationships with their parents also increases as a result of the extra time their parents have to spend with them once the home is complete. When families have a fully enclosed home that is not exposed to the elements, parents spend less time cleaning dust that enters the home from the outside as well as repairing any damage to the interior of the house from rain damage. PH found that 84.5% of socios say they spend more time with their family than before.⁵² Parents can use this extra time to pay more attention to their children.⁵³ During our interviews, we also found that families felt closer after the building was done.⁵⁴

“ Before the kids were embarrassed to invite friends over. For my daughters to have their own privacy—they can go into their own room, and they can play with friends separately. They can even have a study group at the house and they won't get distracted.”

— 39-year-old woman who has been a socio for 11 years.

Support: Closer relationship with friends due to improved home

Children's relationships with their friends also change when they gain space and privacy. Children who were once embarrassed about their home are now proud to bring their friends over.⁵⁵ The socios we spoke with mentioned that their children now invite friends over for breakfast before school and after school to work on group projects.⁵⁶ These children are able to expand their social networks and develop closer relationships with their friends.

“ I can give my children a better quality of life because my husband’s income is just for food and my money is used to give them more things. I can send them to school.”

— 37-year-old female promoter, who has been a socio for 10 years

Indirect Impacts

Support: Children receive more support from their parents when their parents are less stressed

The relationship between parents and their children also improves indirectly because parents have less tension in their lives.

When parents are able to come home from work to a structurally sound house and relax, they are less stressed and that decreased level of stress can be passed on to their children.

Impacts on Promoters’ Children

The impacts on PH promoters’ children are likely to be similar regardless of the age of the child. We found that some individuals took a job as a PH promoter for supplemental income, while the job was the main source of income for others. In 2009, PH found that the average promoter’s household size was about six people.⁵⁷ Most PH’s promoters were once socios. While there appear to be several impacts on children in the 0-8 age category based on promoters’ employment status with PH, obtaining dignified housing seems to have a greater effect on children’s lives.

ECONOMIC WELL-BEING

Indirect Impacts

Wealth: Increased financial resources available for child’s well-being due to parents’ increased income

We did not find a substantial impact on children from the additional income their parent receives from being a promoter. For most promoters, the job is not about the income; it is about helping others realize their dreams.⁵⁸ However, the additional income can be used to provide for children’s other needs such as school costs.⁵⁹

The money a promoter earns is typically viewed as their own income and is managed by the promoter rather than their spouse. Since the majority of promoters are women, it is likely that this additional income will go toward resources for their children because historically women put their children’s needs ahead of their own. However, in some cases, this may not be true; for example, some promoters join PH to generate additional income for their weekly payments to PH.⁶⁰

RELATIONSHIP WELL-BEING

Indirect Impacts

Interactions: Children experience better interactions with their parents when their parents experience less stress and tension

Promoters’ children are affected by the training their parents receive, especially in the area of communications. Every week promoters attend workshops on a variety of subjects. The promoters take the materials from the workshop home to study and

Box 5: A Child’s Perspective*

Four-year-old Alejandro is benefiting from his parents’ hard work with PH. He, his parents, and his brother and sister will soon have a four-bedroom home. Alejandro is excited that in about one month he will have his own room. He is very proud of his mother, Adora, and father, Noe, and the home they are building for the family. He says that he just wishes they could move in now. He is tired of eating mainly bean-based meals; he is craving chicken. His mom says they will start eating chicken more regularly once the house is completed. He watches his father and uncles work on the home each evening and weekend. There is one room to finish and although Alejandro is too small to help build the house, he knows what each tool is used for, and proudly hands the tools to his father and uncles as they work.

* This fictional account is provided to represent a common PH stakeholder situation. The narrative sketch is based on information collected during interviews and focus groups.



A socio's home under construction.

present it the following week to the other promoters. As a result of these workshops, promoters improve their communications skills. These workshops are especially important in Guadalajara's machista culture.^{vi} In fact, PH found that 37.8% of promoters said they faced problems with their partner because of their independent work outside the home.⁶¹ Promoters also develop their communications skills through sessions that focus on the family. Violence at home is often reduced as a result of these family workshops.⁶² Children appear to feel the reduced tension at home when a strong mother begins advocating for her rights and the rights of her children. One promoter told us that before she began working with PH, she was depressed and was only living for her children. She was afraid of her husband, but once she joined PH, she lost that fear, and took control of her life. PH found that this promoter was not alone. A PH survey found that 93.6% of promoters said they were able to transfer what they learned during the PH trainings into other areas of their lives.⁶³

Impact on Children in the Broader Community

CAPABILITY WELL-BEING

Direct Impacts

Aspirations: Increased aspirations from living near dignified housing

Living near dignified housing allows children to broaden their aspirations and expectations for their future.

Aspirations: Improved aspirations for the future as young children see promoters as role models

Promoters are seen as role models and can affect children in the broader community. Promoters impact the lives of potential socios by encouraging them to change their traditional views of the roles of men and women. Many share their own stories of joining PH without talking to their husband about it and encourage

^{vi} Machista culture is a strong or exaggerated sense of masculinity, stressing attributes such as physical courage, virility, domination of women and aggressiveness.

potential female socios to do the same.⁶⁴ By encouraging women not to follow traditional norms of male and female roles, the promoters demonstrate to the children of potential socios that gender does not have to limit aspirations.

RELATIONSHIP WELL-BEING

Direct Impacts

Local Environment: Decreased quality of local environment for children living near plants that PH sources materials from

Beyond children living in Guadalajara, it is important to also consider potential impacts on children living near plants that PH sources materials from. Since PH uses CEMEX cement, it is relevant to examine CEMEX's environmental impact. CEMEX has had some environmental issues—which can have lasting effects on children's health and their environment. In 2011, CEMEX agreed to pay a \$1.4 million federal penalty and spend \$2 million for equipment to control illegal emissions at its plant in Fairborn, Ohio. The company installed pollution controls to reduce harmful emissions of nitrogen oxides, NO_x, and sulfur dioxide, SO₂, pollutants that can lead to childhood asthma, acid rain, and smog.⁶⁵ CEMEX was also fined \$1.5 million by the state of Colorado in 2010 for numerous air quality violations reported in 2004, 2005 and 2006 and ordered to stop burning tires at one of its plants.⁶⁶ Also in 2010, the company was fined \$525,000 in Florida for emitting mercury at levels nearly 10 times the allowable limit, and the company was ordered to make changes to one of its Hernando cement kilns to alleviate the problem.⁶⁷ According to the company's 2011 sustainability report, CEMEX increased the rate of substitution of alternative fuels in its cement kilns to 25% and adopted a 2015 goal to achieve 35% alternative fuel use in its kilns. Through its carbon reduction strategy—including investment in clean development mechanism projects, and increased use of renewable energy—CEMEX has been able to reduce its specific net CO₂ emissions per ton of cement by almost 23% from 1990 levels, or the equivalent of the emissions generated by 900,000 homes per year.

Box 6: An Exploration of Socios Who Leave the Program

More than half of the socios who left the program indicated that they left because of economic reasons, while roughly a quarter of them indicated that they were participating in another payment program. PH does not track socios that do not complete their building projects. Although the reasons for leaving the program are varied, an array of negative impacts likely occur on the 50% of socios who do not complete their building project. These negative impacts may relate to these socios' inability to recover their investment.

Our hypothesis suggests that impacts on socio children in the 0-8 age group who stay in the program for a longer period of time are better than those on the young children of socios who drop out earlier. On-time receipt of materials is likely a motivating factor for persistence in the program. Some socios may also leave the program because they have received all of their materials, or do not require a full 70 weeks to finish their projects. We found that cell staff recommend that socios only stay in the program for 50 weeks if they do not require materials during the remaining 20 week period.⁶⁸ The financial impacts on the children of socios who drop out and never contact PH to obtain their materials, nevertheless, could be substantial.

OPPORTUNITIES FOR GREATER IMPACT

Gaining dignified housing substantially impacts the lives of children, and there are opportunities for PH to better meet the needs of its existing market by mitigating its negative impacts and enhancing its positive impacts. PH can meet the needs of more socios and their children by increasing its penetration into existing markets as well as new markets. Each of our suggestions for enhancing, deepening, and expanding PH's impacts on children can generate more business for PH, but are dependent on the venture's available resources. The below tables present potential ways PH can deepen its impacts. Prioritized recommendations are bolded.

ENHANCE POSITIVE IMPACTS

Table 4: Opportunities to Enhance Positive Impacts

Opportunity	Potential Response
Socio retention rate	Explore research factors that contribute to low socio retention rate and its impact on children to develop new strategies to reduce the dropout rate.
Promoter retention rate	Explore methods to gain a better understanding of the impacts on promoters who drop out of the program.
Socio re-enrollment rate	Consider checking in regularly with socios who are saving for mason costs to increase motivation to rejoin PH.
Child friendly design	Explore involving socio children in discussions about the design of the room. Staff a child specialist to encourage room designs that impact children.

Prioritized recommendations are bolded

- **Explore research factors that contribute to low socio retention rate and its impact on children to develop new strategies to reduce the dropout rate**

PH should explore the research question of why and when socios drop out in order to collect information it can use to increase the program's 50% retention rate and completion rate. This could be done by tracking and following up with socios who leave the program. This recommendation is particularly important; because PH does not collect data on socios who leave the program, little is known about the impacts on the children of these former socios in the 0-8 age category. We recommend that PH either track socio retention data or commission a study by an external organization. A study by an external source would provide PH with the added benefit of objective benchmarks to increase the initiative's value for socio dropouts. (See the Capturing Impact section for more details on what such a study could look like.)

To reduce socio dropout, PH could consider customizing the length of the payment plan based on socios' building needs, reinstating the mason training program, including mason costs in the saving plan, or even hosting regular socio support meetings, as well as shift promoters' incentives from recruitment to socio completion of projects.

- **Explore methods to gain a better understanding of the impacts on promoters who drop out of the program**

Although a certain amount of promoter turnover is expected, PH could consider collecting information from promoters who drop out. Without a more systematic assessment, we are left to guess how PH impacts them. Since the majority of promoter drop out within the first two months of work, it is likely that dropouts do not have a chance to gain much, if any, of the benefits from PH's training programs,⁶⁹ it appears that the impacts would be minor. Nevertheless, it is still important to ensure that this is indeed the case, as there may be some negative impacts associated with leaving. Collecting data on the impact of PH on their life when collecting information on why they dropped out would help PH develop strategies to reduce the number of dropouts in the future.

- **Consider checking in regularly with socios who are saving for mason costs to increase motivation to rejoin PH**

PH could magnify its positive impacts on children in the 0-8 age group by increasing its re-enrollment rate. It is likely that socios' children experience positive impacts when their parents re-enroll with PH and complete another project. Reinstatement of the masonry training program could assist PH with ensuring a more seamless transition from one project to the next, and facilitate contact with customers. Regular contact with former socios through a standardized monitoring system would also provide PH with information on date of last contact and frequency of contacts with customers.

- **Explore involving socio children in discussions about the design of the room. Staff a child specialist to encourage room designs that impact children**

PH could also enhance its impacts on children by involving children in discussions about room designs and having them draw a picture of what they would like a new room to look like. This activity would also likely encourage parents to involve their children in discussions at home about the room design. Additionally, PH could consider adding a child specialist to its staff to improve home design for families with children. PH could also offer home visits that include the child specialist in addition to the architect to assist families in thinking through design attributes that would have the greatest impact on children.

REDUCE NEGATIVE IMPACTS

Table 5: Opportunites to Reduce Negative Impacts

Opportunity	Potential Response
Financial constraints during the building and saving process	Explore providing additional support through partnerships such as access to nutritional supplements and information to educate parents on the nutritional needs of pregnant women and children ages 0-8. Increase flexibility in the payment plan by providing longer breaks, allow lower or higher weekly payments, and/or accept payments on a non-weekly basis.
Reduced time socios and promoters have to spend with their children	Explore providing child care through partnerships for socios or PH cells for staff.
Impact of PH's inputs on children	Consider working with companies that use a certification process for inputs PH uses.

Prioritized recommendations are bolded

- **Explore providing additional support through partnerships such as access to nutritional supplements and information to educate parents on the nutritional needs of pregnant women and children ages 0-8. Increase flexibility in the payment plan by providing longer breaks, allow lower or higher weekly payments, and/or accept payments on a non-weekly basis**

To reduce negative impacts that may occur on socios' children due to financial constraints during the building and saving process, PH could consider increasing flexibility in the 70 week payment plan structure. For example, PH could allow socios to take longer breaks from payments when it becomes apparent that children's nutritional health is affected. This flexibility could also include allowing socios to make smaller weekly payments or changing payment due dates. Other options include cultivating partnerships with government, non-governmental organizations (NGOs), and community organizations to provide additional financial support and services to socios. PH could act as a distribution channel for social messaging for these partners, leveraging a multi-channel marketing strategy including on-the-ground information dissemination through promoters and distributors; as well as print, television, radio, and social media marketing. Government and NGO support could include access to nutritional supplements and information and training for parents on matters of finance, children's nutrition, pregnancy, and early childhood development.



A child doing schoolwork at a Guadalajara children's center.

- **Explore providing child care through partnerships for socios or PH cells for staff**

PH could leverage the partnerships it builds with NGOs and community centers to provide child care for the children of socios during the building and saving process. At the same time, PH could consider investing in providing child care for promoters and other staff at PH cells. Providing access to child care for both socios and promoters would help increase retention of these stakeholders as well as create stronger customer loyalty, increasing profitability in the long term. High-quality early child care environments with sensitive and nurturing caregivers, a supportive emotional and academic climate, as well as developmentally appropriate curricula have repeatedly been shown to support learning. Multiple studies have demonstrated that high quality child care interventions (often in conjunction with other family supports) can have dramatic long-term effects on children's academic and social development. Quality child care experiences can also mitigate the negative effects of poverty on children's academic achievement.⁷⁰

Most socios indicate that they have relatives watch their children when they are at work, whereas most promoters choose to work hours around their children's school schedule. However, PH could consider partnering with a community center to provide a location for socios', promoters' and staffs' children to come to after school, while their parents are at work. At the center, children could receive assistance with their homework, have access to a computer, and/or learn the value of teamwork through athletics. Community centers also frequently provide healthy snacks for children, contributing to improved nutrition.



Children playing at a Guadalajara children's center.

- **Consider working with companies that use a certification process for inputs PH uses**

PH could consider gaining a better understanding of the impacts of its inputs on children. PH can help ensure that inputs it uses do not negatively impact children in the 0-8 age group by working with companies that use a certification process for their products. An understanding of these impacts could include increased research into use of alternative energy sources and preventative action to increase mitigation of CO₂, NO_x and SO₂ emissions at its plant. Proper testing and measurement equipment in addition to improved procedures to monitor and control emissions would ensure that the organization is meeting requirements for healthy and more sustainable environments for children living near its facilities.

INCREASE PENETRATION IN CURRENT MARKETS

Table 6: Opportunities to Increase Market Penetration

Opportunity	Potential Response
Marketing strategy	Consider developing new marketing materials and strategies that highlight PH's expected impacts on children, using new advertising outlets, and partnering with community organizations, government and NGOs to reach new customers
Working with schools	Explore re-introducing school improvement programs

- **Consider developing new marketing materials and strategies that highlight PH's expected impacts on children, using new advertising outlets, and partnering with community organizations, government and NGOs to reach new customers**

PH could reach more of its target population through partnerships with government, NGOs, and community organizations as well as multi-channel delivery of its marketing message. Strategies could include messages highlighting PH's impacts on children age eight and under through promotional materials, promoters, distributors, and its partnerships in addition to traditional and social media. Promotional materials could include information on the benefits children receive from having their own room or a back patio on which to play. It is likely that this type of information would increase parent motivation to improve their homes.⁷¹

Historically, PH has not used traditional marketing outlets including print, radio, and television due to the organization's belief that the media does not provide channels through which the initiative can convey a personalized trust building message for customers.⁷² However, now that PH has established a presence in communities and demonstrated success, a mass marketing campaign through print, radio, television, and social media could promote further awareness of the initiative. Before PH attempts to mass market itself, we suggest the initiative gain a better understanding of its reputation among community members, parents, and children. This can be done alongside the studies we recommend in the next section. Such an exercise would help PH further tailor its marketing message and identify the most appropriate channels for delivery.

Through its government, NGO, and community partnerships PH could increase distribution of promotional materials and create links to its initiative via social media architecture. After PH headquarters establishes these partners, we suggest that a PH coordinator or promoter act as a liaison to the organizations. Developing partnerships at a national level would aid PH entry into new markets by creating a central point of contact. PH could also seek out partnerships for social services delivery, such as those mentioned in the Reducing Negative Impacts section, to assist socios during the building and saving process. Ideal partners would include organizations with community centers. Through these partnerships PH could provide access to nutritional supplements and child care as well as financial, nutrition, and early child development classes for parents.

- **Explore re-introducing school improvement programs**

PH could also broaden its impacts by partnering with local schools. In particular, PH could consider re-introducing its Escolar program, which assisted more than 500 schools across Mexico with facilities improvements by providing free building materials and construction assistance. The materials were paid for by a small portion of the PH membership fee and each socio was allowed to choose the local school he or she would like to support. PH then provided materials to the school based on its needs, including new classrooms, playgrounds, exterior walls and bathrooms. These structural improvements created safer learning environments for children.

EXPAND TO NEW POPULATIONS AND MARKETS

Table 7: Opportunities to Expand to New Populations and Markets

Opportunity	Potential Response
Rental market	Explore mitigating constraints to building for renters
Land ownership issues	Explore opportunities to address land ownership issues
Operations outside Mexico	Explore scaling operations in and to other countries

- **Explore mitigating constraints to building for renters**

PH can gain new socios by tapping potential in the rental market, a sector PH has had difficulty penetrating due to the added financial constraint of rental payments. Two rental families we spoke with indicated they were not interested in working with PH even though they owned land in another part of town, because they did not have the income to cover both the PH weekly payment and their rental payments.⁷³ We recommend that PH continue to explore this sector by gaining a better understanding of renters' needs and their financial constraints.

- **Explore opportunities to address land ownership issues**

PH can expand into new markets by addressing land ownership issues. In some informal communities, PH serves families that pay approximately 300 pesos a week in rent—more than PH's weekly payment.⁷⁴ Many stay in rental properties long after the 10-15 year mark when they have gained land ownership rights.⁷⁵ However, many never apply to receive the property they are entitled to because they do not know their rights. PH could address this problem through education and assistance with filing the appropriate paperwork. PH could also consider adapting its savings program to assist families with any filing fees. PH should also explore developing partnerships with government, NGOs, and local financial institutions working to address land ownership issues.

- **Explore scaling operations in and to other countries**

Looking ahead, PH could focus on attracting more investment capital to scale its pilots in other countries and to expand to new locations in order to expose more people to the benefits of improved housing.

CAPTURING IMPACTS

In this section, we outline at a high level how PH can quantify the set of impacts identified in the Impact Findings section and move toward regularly measuring its outcomes on its stakeholders and their children ages eight and under. We suggest that PH consider conducting its own study or commission a study from an outside source (preferred method) to learn more about its impacts. By conducting a thorough assessment of its impacts, PH can:

- **Assess opportunities to enhance its value to its stakeholders.**
- **Create additional revenue generating models to better meet the needs of stakeholders and seek partnerships to facilitate them.**
- **Demonstrate the success of its business model to external stakeholders.**

MOVING TOWARD A SYSTEMATIC IMPACT ASSESSMENT

PH took a deep dive into understanding how it influences its socios with its 2007 impact assessment. We recommend that the initiative now take steps to systematically measure its impacts on socios' children ages 0-8. This will allow PH to gain a more nuanced understanding of the needs of young children as well as how these needs change over time. Rather than focus on measuring the impact it has on all its stakeholders' children, we recommend that PH start by first measuring its impacts on socios' children, since PH has a base with its 2007 impact assessment and the most varied set of impacts occur on this group. Once PH develops a regular system to capture its impacts on socios' children, it can consider measuring its impact on its promoters', staffs', and distributors' children.

To capture PH's impacts on children in a manageable way, we suggest that the initiative develop a short, mostly quantitative survey of core areas impacting children age eight and under. The survey should be distributed to new socios at four key intervals: 1) at sign-up, 2) the program midpoint: week 35, 3) upon completion of a project, and 4) six months after a project is completed. Recording GPS coordinates will help interviewers to find respondents home at later data collection points. This schedule of surveys would help PH capture both short- and long-term impacts and show changes in impact over time.^{vii} If someone leaves the program, PH should continue to collect data when the aforementioned points in time would have occurred if the person had stayed in the program to capture the impact on children. To understand the impacts on socio dropouts and their children, it is important to track the types of materials socio dropouts request and the rate of usage. The quantity of materials that go to waste due to improper storage or resale should also be tracked.

We recommend that the survey be administered by interviewers rather than filled out by the socios themselves. This would help ensure that respondents fully understand the questions and do not leave questions blank. We also recommend that PH hire a third party to conduct the interviews to reduce response bias. An alternative PH could consider to lower costs would be to have its staff conduct the surveys at the cell when socios drop off their weekly payments. If PH decides to do this, we recommend that it still commission an independent assessment of its social impacts every few years to ensure objectivity of the findings. Regardless of who conducts the surveys, PH should hold a brief workshop to ensure that the interviewers understand the purpose of each question.

Based on the likely direct and indirect impacts we found in the field on the majority of socios' children, we identified core impact areas for PH to consider measuring using subjective questions, many of which can be quantified using Likert scales of 1-5 (see **Appendix G**). Since the impacts are likely to vary by the child's age we specify which questions should be asked according to age group. The survey should begin with a question about the number of children in the home and their ages so the interviewer knows which

^{vii} PH could also consider obtaining a representative sample of its socios once a year if it would be difficult to regularly survey all socios.

questions are appropriate. At the end of the survey, the interviewer should ask an open-ended question to capture any other differences the parents have noticed in their children. During the survey, the interviewer should observe each child's behavior and appearance, if present. The questions in **Appendix G** are suggested questions and should be pre-tested with socios and adapted to local contexts.

We suggest that PH continue to use the BoP IAF to systematically capture its impacts on socios. The tool will provide a structure through which PH can categorize and track new findings on impacts derived from its surveys. PH may also find the tool helpful if it decides to capture impact data on its promoters' children and children in the broader community in the 0-8 age group. A benefit of using the BoP IAF is its flexibility—PH can customize the tool to its needs, which will allow the venture to measure its impacts in a manageable way.

REDUCING THE NUMBER OF UNSUCCESSFUL PROMOTERS AND SOCIOS

As suggested in the Opportunities For Greater Impact section, PH should also consider tracking or following up with promoters and socios who drop out of the program. A comparison of the characteristics of successful socios and promoters to unsuccessful ones through a study would provide PH with information it could use to change how it works with unsuccessful socios and promoters and increase its socio retention rate. PH could use the results of the study to identify and categorize groups of socios to develop strategies to work with them (the same could also be done for promoters). This would allow PH to have a better understanding of the categories of socios and promoters, of the types of support required and insight into how the initiative could provide this support. Here we provide high-level recommendations for what such a study could look like regardless of whether PH tracks information on socios and promoters that drop out or commissions a study by an external organization.

We recommend that PH collect data from a representative sample of successful and unsuccessful socios and promoters. Information could be collected through a survey and include demographic questions as well as open-ended qualitative questions about their reasons for leaving. The survey should also include subjective measures to understand more about the individual's physical environment, feelings of self-efficacy, psychological health, physical health, and social network. These differences among groups and successful and unsuccessful socios as well as promoters could then be used to tailor razor-sharp strategies for each group.

CONCLUSION

Housing has great potential to positively impact children's lives in a holistic way. During our research it became clear that different types of impacts occur on children based on whether their parents are in the process of saving money and building or have achieved an outcome i.e., a completed building project. While impacts that occur during the saving and building process can be negative, we found largely positive impacts from the completion of a building project. We also found that there seemed to be differences in the impacts that occur on children based on their age.

Businesses and other initiatives similar to PH can create even more impact through employment. We found impacts on the children of a number of other individuals along PH's value chain. The impacts we found on the children of promoters, local distributors and local staff were all indirect and resulted from the direct impacts of PH on their parents. Many of these impacts are likely to have a significant effect on children. Thorough secondary research, we also found some negative environmental impacts that likely occur on children whose parents are not connected to the initiative, but who live near PH socios, due to some CEMEX practices.

PH should be applauded for working to understand its impacts. The impact study PH conducted in 2007 was a deeper dive than many similar businesses take. PH should strive to continue to be a leader in understanding impacts by regularly measuring its effects on socios and their children. Based on our findings, we provide suggestions for ways PH could enhance, deepen, and expand its impacts on young children. Key recommendations include:

- **PH should provide additional support through partnerships to reduce some of the potential negative impacts associated with the building process and the time commitment of the promoter's job.**
- **PH should research factors that contribute to low socio and promoters retention rate and its impact on their children to develop new strategies to reduce the dropout rate.**
- **PH should gain a better understanding of the impacts on promoters who drop out of the program.**
- **PH should explore providing additional support to socios through partnerships such as access to nutritional supplements and information to educate parents on the nutritional needs of pregnant women and children ages 0-8.**
- **PH should increasing flexibility in the payment plan by providing longer breaks, allow lower or higher weekly payments, and/or accept payments on a non-weekly basis.**
- **PH should explore providing child care through partnerships for socios or PH cells for staff.**

Together these suggestions can help PH improve its operations to better meet the needs of children.

APPENDICES

APPENDIX A: SOCIO BACKGROUND INFORMATION

Table 8: Demographic Characteristics of Socios

Indicator		Percentage
Gender	Female	65.8
	Male	34.2
Education	None	4.8
	Primary	38.2
	Secondary	29.6
	A-Level	13.1
	Technical School	5.1
	University (Bachelor)	3.1
Marital Status	Married or in Partnership	80.7
	Single	10.5
	Divorced or Separated	4.8
	Widow	4.0
Decision making	Husband and Wife	70.2
	Husband	13.9
	Wife	15.3
	Other	0.6

Source: Data from PH "Brief Profile PH Clients."

Table 9: Income Characteristics of Socios

Indicator		Percentage
Monthly Family Income	Less than 2 MW (minimum wage)	17.5
	Between 2 and 3 MW	36.0
	Between 3 and 4 MW	12.5
	Between 4 and 5 MW	15.0
	Between 5 and 6 MW	5.0
	Between 6 and 7 MW	2.5
	More than 7 MW	6.0
	No information	5.5
Frequency of Payment	Daily	3.3
	Weekly	48.8
	Bi-weekly	29.8
	Monthly	18.2

Source: Data from PH "Brief Profile PH Clients."

APPENDIX B: ADDITIONAL IMPACTS ON SOCIOS' CHILDREN

Impacts that occur during the saving and building process as well when the building project is completed that are not bolded in **Table 3** are explored here:

Additional Impacts of the Saving and Building Process on Socio Children

CAPABILITY WELL-BEING

Direct Impacts

Physical Health: Increased risk of injury due to proximity to construction site

The physical health of children can be directly affected during the building process. In particular, children are more likely to get scratches or scars if their parents choose to live in the home while it is under construction. The likelihood of severe injuries is low and one of PH's architects mentioned that the children are often proud of any scratches they get from helping their parents with building.⁷⁶ Younger children ages 0-5 are more affected by this than older children ages 6-8 because they have less awareness of the dangers the construction site holds.

Education/Knowledge: Increased knowledge about construction and masonry through observation of their parents' skills in self-construction, as well as through participation in these activities

Children are indirectly impacted by observing their parents during the saving process. For many socios saving money is a new skill they learn from participating in PH's savings process.⁷⁷ Socios' children gain insight into the importance of saving money as well as how to do so by modeling their parents' behaviors during their parents' enrollment in the PH program. Research in the area of early childhood development has found that children can understand basic financial concepts as early as age four or younger, including scarcity, production, specialization, consumption, saving, distribution, supply and demand, business, money and barter. As socios' savings grow, their children can begin to follow their patterns of behavior. Acquiring a habit of saving at an early age, when financial behaviors are still being formed can have significant effects for low-income youth. The mental process of saving often becomes automatic through practice. Practicing saving skills, such as self-control and planning, can also improve cognitive strength and future wealth.

Although the stage of development influences children's grasp of financial concepts, socialization and exposure are also important factors. Through financial socialization, children acquire and develop values, attitudes, standards, norms, knowledge, and behaviors that contribute to their financial viability and well-being.⁷⁸ Although financial skills can be taught in formal educational settings, research demonstrates a strong link between the home environment and children's acquisition of financial skills. Most of the knowledge that children retain is gained through parent teaching and role modeling. Research, nevertheless, suggests that children of low-income parents may be at a disadvantage when it comes to parent transfer of financial knowledge. As compared to middle- and upper-income parents, low-income parents report feeling less prepared to teach financial skills to their children and serve as role models of good financial habits.⁷⁹

Children are also indirectly impacted by observing construction on their home. Just as children increase their acquisition of basic financial skills through observation of their parents during the saving process, they also learn about construction by watching their parents, masons, and builders work on their home. They learn by doing, assisting their parents during the construction process in age appropriate activities. The knowledge can prove useful later in life or spur a child's interest for a future occupation in construction or related industries. Older children (ages 6-8) likely benefit more from these skills since they are more likely to retain them than younger children.

Leisure Time: Reduced free time due to increased responsibility: older children are expected to take on more responsibility at home as parents take an additional jobs or build the home

Children often take on additional chores and responsibilities at home while their parents' time is directed toward building a home with PH or spending more time outside the home on additional jobs. Through increased responsibility in the home, children can develop a mastery of skills and self-efficacy. When children successfully complete chores in the home, they form a more accurate assessment of their individual skills and capabilities, increasing their confidence on repetitive tasks, and providing them with the self-esteem to attempt activities outside their comfort zone.⁸⁰ This likely affects older children (ages 6-8) more than younger children (ages 0-5) because older children can take on more responsibilities around the home and construction site than younger children.

Additional Impacts of the Completed Building Project on Socio Children

CAPABILITY WELL-BEING

Direct Impacts

Physical Health: Reduced injuries due to safer home

Falls, carbon monoxide poisoning, and burns are injuries that can occur in the home. Expanding the size of the home-space provides children with more room to play, making injuries less likely. Burns that occur from playing too close to a parent while he or she cooks at the family stove are likely reduced as is the likelihood that children will knock heavy objects onto themselves.⁸¹

Indirect Impacts

Physical Health: Improved child health due to parents' improved health

Children's physical health is also indirectly impacted through their parents as the spread of disease within the family can be reduced when more space is introduced to the home and family members no longer share rooms.⁸²

Psychological Health: Increased self-esteem due to increased privacy

Having more privacy also changes how children feel about themselves; their self-esteem can increase.⁸³ Children's confidence can increase from growing up in a home with only their immediate family. Often as socios build new homes with PH, they move away from their extended families. As a result, children

feel more secure making their own decisions and do not feel the pressure of receiving messages from multiple family members.⁸⁴

However, if socios decide to build on new land and their children have to move to new neighborhoods, the move can have negative effects on the psychological state of children as they leave behind familiar surroundings.⁸⁵ Nevertheless, moving can have the opposite effect on children, with the exposure to new experiences and surroundings making them more open-minded and tolerant.

“My kids want me to finish so they can have a beautiful home. My oldest said she would help me build it. The kids are motivated to get the house, so when I get home from work, the dishes are clean, the house is clean.”

— 29-year-old female, who has been a socio and promoter for five months.

Children's stress also often decreases because their parents argue less. This is in part the result of having a private space to go to when they are upset. For instance, one socio used to go into the bathroom when she argued with her husband, but now she retreats to another room to relax and reorder her thoughts.⁸⁶

With less parental conflict, the mood of the family changes and children are more calm, relaxed, and playful.⁸⁷

“The first change I see in socios’ children is that they look happier and calmer,” said a 58-year-old female promoter who has been a socio for 11 years. “Because they are calmer they don’t fight as much with parents and siblings, and because of that, they start doing better at school. They have better self-esteem, are safer, and are more outgoing.”

RELATIONSHIP WELL-BEING

Direct Impacts

Adaptability in School: Easier assimilation into school environment as a result of gaining an improved home

Older children (ages 6-8) are not only expected to perform better in school, but also their assimilation into the school environment is also expected to be facilitated through their parents’ work with PH. Because some children gain bathrooms in their home through PH, they learn how to properly use the facilities before entering the school environment. One school principal shared that some children who come from homes without a proper bathroom use a trash bin, or will use a toilet but do not know how to flush it.⁸⁸ Other children who do not have access to water at home use the school sinks to shower and wet their hair before school. Children who have a dignified home with appropriate facilities that they know how to use are taunted less and are able to better relate to their peer groups.⁸⁹

Local Environment: Increased security from gaining a more secure home

Children’s security increases when they have a home constructed of brick or concrete versus laminate plastic or cardboard.⁹⁰ Provisional material construction allows thieves to easily enter the home.⁹¹ One-room homes are especially attractive to thieves because it is easier to clean the house of its valuables.⁹² Many of the socios we spoke with mentioned having their homes robbed before. Children also have a stronger sense of belonging as the house gains more space.⁹³ Children can feel vulnerable in crowded spaces because they feel that they do not have an individual place.

Indirect Impacts

Support: Closer relationships with parents related to parents spending less time repairing and cleaning the home and reduced parental stress associated with financial state

When parents come home to find their belongings ruined by a rainstorm or the roof blown away, they sometimes take that frustration out on their children. Coming home to a house that is in order allows parents to use their time in more productive ways, such as enjoying time with family, rather than repairing the damage from heavy rains. Additionally, factors affecting parental income impact parenting capacity, including parental depression, sickness in the home and marital stress. Depression disproportionately impacts low-income parents, who suffer higher rates due to poverty, lack of social supports and networks, substance abuse, intimate partner violence, and childhood abuse. Maternal depression, alone, or in combination with other risks, can create barriers to healthy early childhood development and school readiness, particularly for low-income young children. Higher income levels influence parental mental health, and improvements are seen especially in maternal mental health and the maternal relationship with children during early childhood development.⁹⁴

APPENDIX C: ADDITIONAL IMPACTS ON PROMOTERS' CHILDREN

Impacts that occur on promoters' children that are not bolded in **Table 3** are explored here:

CAPABILITY WELL-BEING

Indirect Impacts

Psychological Health: Increased self-esteem as a result of parents' increased self-esteem

Working as a promoter is rewarding and increases promoters' self-esteem because they are recognized and admired in the community.⁹⁵

"People in the community look at us differently—they look at us like we are important people. We are motivators," said a female promoter who is approximately 46-years-old. She started as a socio 10 years ago and after three months, became a promoter.

As a result, promoters gain confidence. Indeed, in a past study PH found that 97.8% of promoters gained confidence. A strong and confident parent is a good role model for young children.⁹⁶ Children's self-esteem may increase as a result of modeling their parents' behavior and how they carry themselves.

RELATIONSHIP WELL-BEING

Indirect Impacts

Support: Increased social capital from parents' increased social network results in increased resources for children

Children of promoters are impacted indirectly by the increase in their parents' social network. Promoters' social networks can increase dramatically. As a result of meeting so many new people, the promoters make many friends. These new friendships can benefit their children by providing them with access to resources and opportunities that might be useful in achieving their future goals.⁹⁷

Note: Since promoters are paid on commission, they have flexibility in their schedule, and can work around their children's school activities. This allows them to maintain the same level of quality in their relationships with their children.⁹⁸

APPENDIX D: ADDITIONAL IMPACT ON CHILDREN IN THE BROADER COMMUNITY

Impacts that occur on children in the broader community that are not bolded in **Table 3** are explored here:

ECONOMIC WELL-BEING

Indirect Impact

Wealth: Increased financial resources available for child's well-being as a result of promoters extended families starting to work at PH

Promoters also impact the lives of children in their extended families. Many of their family members also start working at PH as either promoters or in the cell. As a result, the benefits their children see in the economic and capability dimensions are similar to those of promoters' children.

CAPABILITY WELL-BEING

Direct Impacts

Physical Health: Reduced illness and injury in children who play at a PH house

Children who play at a PH house are typically playing in an environment that protects them from respiratory illnesses and injuries that children frequently acquire while playing at a poorly maintained property.

Psychological Health: Increased jealousy of friends' PH homes

Some children may become jealous of their friends' PH homes.

APPENDIX E: IMPACT ON BOP STAFFS' CHILDREN

Impacts that occur on cell staffs' children that are not bolded in **Table 3** are explored here:

ECONOMIC WELL-BEING

Indirect Impact

Wealth: Increased financial resources available for child's well-being as a result of parents stable job

PH provides their cell staff with stable income. As a result of this increased economic security, parents are likely able to provide additional resources to their children to meet their basic needs.

RELATIONSHIP WELL-BEING

Indirect Impacts

Support: Increased social capital from parent's increased social network results in increased resources for children

Children of cell employees are impacted indirectly by the support they receive through the expansion of their parent's social networks. PH's Guadalajara architect said she feels like her bonds with the socios are very strong and they see her as a friend.⁹⁹ Having a parent with a large social network can benefit children by providing them with access to the opportunities and resources available within those networks.

APPENDIX F: IMPACT ON DISTRIBUTORS' STAFFS' CHILDREN

Impacts that occur on distributors' staffs' children that are not bolded in **Table 3** are explored here:

ECONOMIC WELL-BEING

Indirect Impact

Wealth: Increased financial resources available for child's well-being due to parents' increased income

As a result of working with PH, distributors gain extra business and are able to hire more staff from the BoP.¹⁰⁰ The income these new employees receive can positively impact their children if the money is directed towards their needs. For example, with this additional income parents can provide their children with more food and school supplies.

APPENDIX G: ADDITIONAL IMPACT ASSESSMENT SUGGESTIONS

These questions provide a starting set of impacts we recommend PH use to begin regularly capturing their impacts on socios' families. The below questions are illustrative of how PH could quantitatively measure some of its key impacts on children. These questions have not been tested and should be reviewed for reliability and for adaption to local context.

The surveys should be structured in order to ensure comparability across respondents. Therefore all surveys should include the same questions, so changes in the socios' children's lives can be compared and measured over time. However, impacts will likely vary based on the age of the child. Therefore we suggest that the surveys clearly mark questions intended for older children and use skip patterns to only ask questions that apply to the child based on the child's age (see **Table 10**). The survey should begin with a question about the number of children in the home and their ages so the interviewer knows which questions are appropriate

Table 10: Suggested Impacts to Measure and Potential Questions

	Impact	Potential Question	Question Type
Economic Well-Being	Wealth	What job and other sources of income does the male head of household have?	
		What job and other sources of income does the female head of household have?	
		What is your average weekly income? Please include all sources of income.	
		Please answer the question using the scale based on how true the following statement is- My household income is stable. <i>Scale: 1=Strongly agree, 2=Agree, 3=Neither agree or disagree, 4=Disagree and 5= Strongly disagree</i>	
		In an average week, how much money do you spend on your child? How much of that is health-related expenditures?	Ask caregiver about both younger and older children
		Over the past week, to what extent were you able to meet your child's clothing needs?* <i>Scale: 1=Not at all, 2=A little, 3=A moderate amount, 4=Very much, 5= An extreme amount</i> *This question can be repeated to ask about other material needs a child has, such as school supplies.	Ask caregiver about both younger and older children

	Impact	Potential Question	Question Type
Capability Well-Being	Psychological Health	<p>Please answer the question using the scale based on how true the following statement is: My child has high self-esteem.*</p> <p><i>Scale: 1=Strongly agree, 2=Agree, 3=Neither agree or disagree, 4=Disagree and 5= Strongly disagree</i></p> <p>*This question should be repeated to ask about other behaviors including: engages in risky behaviors, is depressed, has aggression, and is hyperactive.</p>	Ask caregiver about older children
	Physical Health	<p>How many times has your child gone to the doctor in the last week? The last month?</p>	Ask caregiver about both younger and older children
		<p>How many times has your child missed school due to health reasons in the last month?</p>	Ask caregiver about older children
		<p>Please answer the question using the scale based on how true the following statement is: The quantity of food my child is getting is sufficient.</p> <p><i>Scale: 1=Strongly agree, 2=Agree, 3=Neither agree or disagree, 4=Disagree, 5= Strongly disagree</i></p>	Ask caregiver about both younger and older children
		<p>Please answer the question using the scale based on how true the following statement is: The quality of food my child is getting is sufficient.</p> <p><i>Scale: 1=Strongly agree, 2=Agree, 3=Neither agree or disagree, 4=Disagree, 5= Strongly disagree</i></p>	Ask caregiver about both younger and older children
	Leisure Time	<p>On average, how much time in hours does your child spend per day playing inside the house?</p>	Ask caregiver about both younger and older children
		<p>On average, how much time in hours does your child spend per day playing outside the house?</p>	Ask caregiver about both younger and older children
	Education	<p>How much, if at all, have your child's grades improved at school?</p> <p><i>Scale: 1=Not at all, 2=A little, 3=A moderate amount, 4=Very much, 5= An extreme amount</i></p>	Ask caregiver about older children
	Aspirations	<p>How much, if at all, have your child's aspirations (i.e. plans for the future) increased?</p> <p><i>Scale: 1=Not at all, 2=A little, 3=A moderate amount, 4=Very much, 5= An extreme amount</i></p>	Ask caregiver about older children

	Impact	Potential Question	Question Type
Relationship Well-Being	Interactions	Please answer the question using the scale based on how true the following statement is: There is little tension between my child and me. <i>Scale: 1=Strongly agree, 2=Agree, 3=Neither agree or disagree, 4=Disagree, 5= Strongly disagree</i>	Ask caregiver about both both younger and older children
		Please answer the question using the scale based on how true the following statement is: There is little tension between my partner and me. <i>Scale: 1=Strongly agree, 2=Agree, 3=Neither agree or disagree, 4=Disagree, 5= Strongly disagree</i>	
		Please answer the question using the scale based on how true the following statement is: There is little stress in my life. <i>Scale: 1=Strongly agree, 2=Agree, 3=Neither agree or disagree, 4=Disagree, 5= Strongly disagree</i>	
	Support	Please answer the question using the scale based on how true the following statement is: My child has developed a closer relationship with family members. <i>Scale: 1=Strongly agree, 2=Agree, 3=Neither agree or disagree, 4=Disagree, 5= Strongly disagree</i>	Ask caregiver about both both younger and older children
		Please answer the question using the scale based on how true the following statement is: I feel like I spend enough time with my children. <i>Scale: 1=Strongly agree, 2=Agree, 3=Neither agree or disagree, 4=Disagree, 5= Strongly disagree</i>	Ask caregiver about both both younger and older children
		Please answer the question using the scale based on how true the following statement is: My child has developed a closer relationship with friends. <i>Scale: 1=Strongly agree, 2=Agree, 3=Neither agree or disagree, 4=Disagree, 5= Strongly disagree</i>	Ask caregiver about both both younger and older children
	Quality of Home Environment	Please answer the question using the scale based on your level of satisfaction: In the past four weeks, how satisfied are you with the physical condition of your house? <i>Scale: 1=Very dissatisfied, 2= Dissatisfied, 3=Neither dissatisfied or satisfied, 4=Satisfied, 5=Very satisfied</i>	
		Please answer the question using the scale based on how true the following statement is: My house is safe for my children. <i>Scale: 1=Strongly agree, 2=Agree, 3=Neither agree or disagree, 4=Disagree, 5= Strongly disagree</i>	Ask caregiver about both both younger and older children
	Quality of Home Environment	Please answer the question using the scale based on how true the following statement is: Our neighborhood is safe for my children. <i>Scale: 1=Strongly agree, 2=Agree, 3=Neither agree or disagree, 4=Disagree, 5= Strongly disagree</i>	Ask caregiver about both younger and older children

During the survey, the interviewer should observe each child's appearance, if present. At the end of the survey, the interviewer should ask an open-ended question to capture any other differences the parents have noticed in their child. The above questions are suggested questions and should be pre-tested with socios to adapt them to the local context.

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