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Lighting the Way Forward in Rural Mexico

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For: **ILUMÉXICO**[®]
PRENDE LA LUZ DE MÉXICO



Miller Center
for Social Entrepreneurship



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Executive Summary

Opportunity: Currently, there are approximately 3 million individuals in Mexico without access to grid-based electricity. These individuals spend a substantial portion of their income purchasing candles and kerosene. Mexico is investing public funds in rural electrification. However ILUMÉXICO has developed a more sustainable model of bringing light to rural communities, one with many advantages, such as after-sale services, over centralized solutions. It could be more efficient and cost-effective for the Mexican government to invest in ILUMÉXICO's solution than pursuing its own.

Research Activities: Our team conducted 32 research interviews with both ILUMÉXICO customers and government program recipients to assess their satisfaction with their solar home systems. We used the Net Promoter Score (NPS) methodology. Findings After-sale services and strong company-customer relationships result in enhanced customer satisfaction, and increase the likelihood that customers recommend ILUMÉXICO products and service to other community members. ILUMÉXICO received a 100% promoter score versus a 75% promoter score of government programs. This validates ILUMÉXICO's approach to customer acquisition and support.

Deliverable: We present field data indicating that ILUMÉXICO's approach satisfies the needs of beneficiaries better than donation-based government programs. This is consistent with current trends in sustainable development practice and scholarship comparing government-led programs with social entrepreneurship. We identify key elements of ILUMÉXICO's business model that influence greater customer satisfaction.

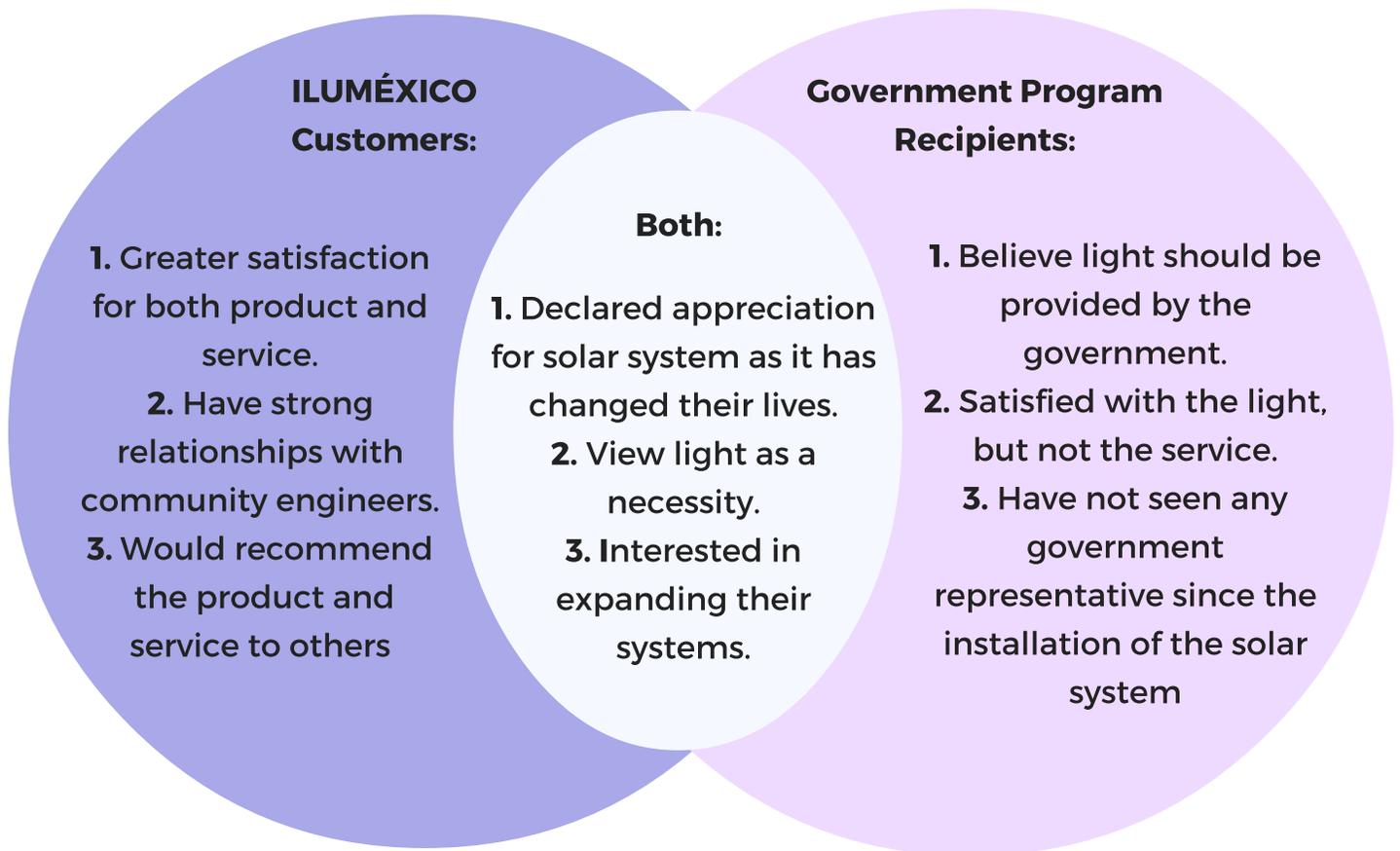
Recommendations: Based on comparison data, we recommend a partnership between the Mexican government and ILUMÉXICO. Through collaboration, these parties can more effectively and cost-effectively reduce energy poverty in Mexico, generating positive impacts throughout rural Mexico.

Table of Contents

Executive Summary	Pg 1
Table of Contents	Pg 2
Voices from the Field	Pg 3
Energy Access for Sustainable Rural Development	Pg 7
ILUMÉXICO's Business Model	Pg 9
ILUMÉXICO's ILUCentros	Pg 10
Conclusion	Pg 11
Endnotes	Pg 12
Works Cited	Pg 13
Appendices	
Appendix one: research and study	Pg 14
Appendix two: methodology	Pg 16
Appendix three: interview questions	Pg 17
Appendix four: Miller Center and its mission	Pg 18

Voices from the Field: How Customer View Solar Energy Products and Services

In June and July of 2016, we conducted a customer satisfaction comparative study in Campeche, Mexico to assess the experience and satisfaction of end beneficiaries acquiring solar energy through different entities. Individuals in the communities either bought a solar home system from ILUMÉXICO, or they received a donated solar home system through La Secretaria de Desarrollo Social (SEDESOL). Using the net promoter score (NPS) methodology [1], customers evaluated the product and services they received. This report articulates how end beneficiaries perceive the value of their solar home system and explains broad trends in the global social enterprise movement addressing energy poverty. We first review key findings from these interviews.



Private sector strategies cultivate stronger customer relationships

The strong relationship between ILUMÉXICO's community engineers and their customers was evident the moment our team entered communities. Customers came out of their homes to greet community engineers and quickly spread the word to others in the community of their arrival. The interactions between the community engineers and the ILUMÉXICO customers appeared very personal and genuine, and evidenced trust. Continual and frequent interactions between ILUMÉXICO community engineers and customers occur through after-sale services, which enable a close relationship to develop. We observed that the community engineers knew everyone in each household, and knew exactly how to attend to their particular needs. This was a contributing factor to the high customer satisfaction of ILUMÉXICO clients. In contrast to donation programs, the customer-centric nature of ILUMÉXICO fosters deep and mutually beneficial relationships.

After-sale service increases customer satisfaction. While both scores are fairly high because individuals prefer solar home systems even with flaws to other forms on energy such as candles, ILUMÉXICO customers expressed greater satisfaction. Further research studies might discern satisfaction related to access to light itself, and satisfaction with the product and service they received. This can often be difficult, because to these individuals it's all the same.



ILUMÉXICO Customers:
100% promoters



Government Program Recipients:
75% promoters

Customers value ILUMÉXICO's after-sale services as assurance they will have light

Because both ILUMÉXICO customers and government program recipients existed in the same communities, ILUMÉXICO's customers were able to witness how government program recipients often suffered from broken systems and a lack of maintenance support after the initial installation. In contrast, at any time, ILUMÉXICO customers could call on a network of support to service their systems and repair any damages. ILUMÉXICO customers we interviewed displayed clear appreciation for the after-sale services, increasing their satisfaction with the products they had invested in. Indeed, ILUMÉXICO customers were not skeptical of solar energy solutions, and thought they were worth paying for. Government program recipients displayed different attitudes. They explained that while they were initially grateful for having received solar home systems free of charge, over time they became disappointed that the systems didn't last long. In the end, they were paying more to purchase replacement parts, were losing time having to fix the systems, and were sometimes without light. Economically, then, ILUMÉXICO customers were better off than government program recipients.

Individuals who purchased solar home systems share enthusiasm and pride

Individuals who decided to invest in solar energy and decided to purchase solar home systems were excited to show how they were able to save enough to make the initial payment and budget to pay off their solar home systems within a year. In particular, the customers who had purchased from ILUMÉXICO more than two years ago often upgraded to more advanced solar home systems. These customers were particularly excited that they could live more dignified lives. Unlike government program recipients who received basic systems, many ILUMÉXICO customers can upgrade their initial solar home systems to connect TVs, blenders and fans in addition to lights. ILUMÉXICO customers thus gain greater improvements in quality of life by investing in solar home systems than government recipients who are given them.

Some individuals we interviewed felt access to energy and light is a fundamental human right. They expressed disappointed that the Mexican government had not provided light to them. They believe it is the responsibility of the government to provide its citizens access to light.

Energy Access for Sustainable Rural Development

Energy poverty is an obstacle to sustainable rural development worldwide [2]. Steady reductions in the price of solar lighting technologies have created new opportunities for reducing energy poverty [3]. Two distinct models have emerged to achieve social development goals: first, direct donations to beneficiaries; and second, selling products to customers through social enterprises, such as ILUMÉXICO. Social entrepreneurship is a revolutionary idea, deploying market-based strategies to address social needs using co-creation, innovation, and integration. This report distinguishes key elements and characteristics of the social enterprise approach to overcoming energy poverty relative to government and charitable approaches.

Traditionally, governments have played a central role in social development. Since World War II, development programs have spent billions of dollars to alleviate poverty [4]. Indeed, many national governments have launched programs to enhance energy access as a development strategy. The Mexican Government funds solar energy projects to foster rural development through the Secretaria de Desarrollo Social (SEDESOL). These projects generally donate solar home systems to end beneficiaries; however, based on the interview responses, simply installing a solar home system is not sufficient. Partnering with a social enterprise appears to have several key advantages over a pure donation model.

First, social enterprises have the capacity to design sustainable models to drive social change. The sustainability of social enterprises is generally achieved by treating end beneficiaries as customers who can and want to invest in innovative technologies that improve their lives. Social entrepreneurship is thus based on dynamic and responsive markets to serve rural and poor communities. Individuals in these communities already expend a significant fraction of their incomes for energy products such as candles, kerosene, or diesel. With appropriate financing and ongoing customer service for renewable energy solutions such as solar home systems, individuals and families in poor communities can redirect their resources to meet other needs. Enabling them to make purchase decisions positions them as economic actors and accords them human dignity.

Second, social enterprises adopt a fluid, adaptive approach enabling positive change without being restricted to a purely government or purely business approach. Social enterprises demonstrate ingenuity in achieving their missions. Social entrepreneurs build business models designed for a particular context [5]. Social enterprises develop new strategies and innovate new practices when data suggests that their current approach is not the most effective [6]. This ability to combine features of government-led and business-led transformations allows social enterprises to reach greater numbers of people, and experiment with new ways to catalyze social change [7]. Once established, social enterprises with customers show remarkable versatility in adapting new ways to deliver their vision [8].

Third, social enterprises provide employment opportunities for individuals in rural communities, multiplying their positive and long-lasting impact. Part of the social enterprise paradigm is co-creation and mutual value exchange. Social enterprises view poor communities as part of the solution rather than the problem. The social enterprise emphasizes engagement of local communities empowerment of customers, and the potential to become employees as local sellers. In other words, social enterprises like ILUMÉXICO help local employees develop skills that will generate long-term benefits for them and their communities beyond the installation of solar home systems. Social enterprises can positively impact three groups of local stakeholders: sale agents (local individuals hired), customers (local individuals buying the product or service), and the local communities in which the enterprise operates [9].

ILUMÉXICO's Business Model

ILUMÉXICO's mission is to combat energy poverty by selling clean energy products. It is an efficient and successful social enterprise because of its unique business model, which is one of its four pillars of innovation.

1. ILUMÉXICO believes that offering an incredible service starts with developing Mexican solar technology that works under extreme conditions and meets the needs of its customers at reasonable prices.
2. ILUMÉXICO believes that working with individuals in the communities it serves fosters social participation and leads to acceptance and success its initiative.
3. ILUMÉXICO believes that offering tools and creating an exchange of value is vital for the development of individuals in the communities. The products and services that ILUMÉXICO offers are sustainable solutions because its customers trust in its simple credit and payment plans, which ultimately make its products affordable.
4. Maintenance and distribution centers known as ILUCentros allow ILUMÉXICO employees to readily reach last mile customers. These service centers also provide employment opportunities in target regions.

ILUMÉXICO's ILUCentros

ILUMÉXICO's fourth pillar, maintenance and distribution, is critical to its success. The ILUCentros, rural service centers, offer customer service, distribution, support and maintenance. They are strategically located in different regions across Mexico so that the communities served by ILUMÉXICO can readily be accessed. ILUCentros are a major driver of the high customer satisfaction rates of ILUMÉXICO customers relative to government program recipients. Customers are offered after-sale services, and are in frequent contact with community engineers who work at their local ILUCentro. In addition, ILUMÉXICO customers are offered payment plans to best fit their personal needs. Contracts are personally drafted for customers, who make monthly payments over a year in the same amount they previously spent monthly on diesel, candles, or other lighting sources. Even after customers finish paying off their solar home systems, they are entitled to maintenance.



ILUCentro in San Luis Acatlán
Photo Credit: ILUMÉXICO

Conclusion

“Successful social enterprises generate positive equilibrium change by increasing the willingness or ability of the government to invest in a given offering, by reframing the way its value is articulated” [10].

The most significant predictor of customer satisfaction in our study was after-sale services. ILUMÉXICO customers described the convenience of after-sale services while government solar program recipients wished they had after-sale services for their solar home systems. Quick responses and personalized attention from ILUMÉXICO community engineers resulted in stronger customer relationships: ILUMÉXICO gained their trust and loyalty and made a greater impact in their lives beyond providing light. Furthermore, ILUMÉXICO’s vision of helping its customers move up the energy ladder inspired its customers to become economic actors, saving in order to invest in larger solar home systems. These, in turn, allowed them to live more dignified lives. Customer satisfaction is made possible by ILUMÉXICO’s mission, and made practical by its fourth pillar, providing local service centers.

Access to modern energy products positively impacts individual families in several ways. First, once individuals have access to energy, they are able to work longer more thus increasing their incomes. Second, replacing candles, kerosene, and diesel for clean energy is better for individual health and for the environment. Third, once families have access to energy, they can invest in other technologies such as refrigerators that allow for better and healthier diets. Overall, having access to energy catalyzes the number of opportunities individuals have and promotes sustainable development.

Endnotes

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Appendix

Appendix 1 Research and Study

Over the course of 8-weeks Madeline Nguyen and Isabel Miranda (author of this report), conducted a comparative study evaluating customer satisfaction between ILUMÉXICO and government programs. The study objective was to identify key similarities and differences between the social entrepreneurship model and the traditional government aid model to solving energy poverty in rural Mexico. Using the Net Promoter Score (NPS) methodology, we interviewed end beneficiaries about their experience in obtaining solar energy, how the products and services affected their lives, and their satisfaction with the products and services.

In Campeche, at least two entities work to electrify rural communities using different models. The government, through its Secretaria de Desarrollo Social (SEDESOL) program, worked between 2012 and 2013 to electrify rural communities using a charity model. Specifically, the government gave away solar panels to communities in Campeche. The second entity is ILUMÉXICO, a social enterprise, which sells solar home systems to individuals at a subsidized price and with a financing program. Largely, each of the two entities is present in the different communities in Campeche.

We thus identifies two groups of individuals for this comparative study: one, individuals who received free solar home systems from government programs and never were customers of ILUMÉXICO; and two, individuals who did not receive free solar home systems from government programs and decided to buy their systems from ILUMÉXICO.

We interviewed a total of 32 individuals, of whom 12 were government program recipients and 20 were ILUMÉXICO customers. To reduce bias in the administration of the survey, one of us conducted all of the interviews, while the other recorded the conversations. All of the interviews were transcribed into a master document, and then translated from Spanish to English. Each interview lasted between 20-40 minutes and included questions about the beneficiaries' experience and satisfaction. These interviews were semi-structured, with the intention of gathering qualitative data, and having the ability to deviate as needed. Neither ILUMÉXICO nor government program representatives were present during any of the interviews.

Appendix 2

Methodology

Measuring social impact is one of the more challenging aspects social enterprises face. ILUMÉXICO uses a Net Promoter Score (NPS) methodology, which consists of asking customers to evaluate their satisfaction. Building on the research of two previous Global Social Benefit Fellows, we used the NPS methodology to evaluate customer satisfaction. We implemented recommendations from their study, including provision of visuals that enables end beneficiaries to easily rate their satisfaction. We were prepared to simplify or reword questions to ensure comprehension.

Our original research methodology was to capture interview data by taking notes. However, we switched methodologies and recorded the interviews in order to fully capture and more accurately report the individuals' responses.

Our sampling was primarily influenced by factors outside of our control. The communities we traveled to were strategically picked by community engineers to include beneficiaries from both entities. However, once in the communities, we sampled based on who was home and available to participate in the interview. We attempted to interview as many individuals as possible in each community. Due to work schedules, we primarily interviewed women, who tended to be at home while the men worked in the fields.

Appendix 3

Interview Questions

- 1.a. How did you get your solar home system?
- 1.b. Why did you choose to buy it? (If applicable)
- 2.a. What were you using as light previous to solar energy?
- 2.b. Do you still continue to buy this product (2a)?
3. How have the employees of ILUMÉXICO/Government attended you?
- 4.a. Since you received the solar home system has it been damaged or broken?
- 4.b. If yes what did you do?
- 5.a. What do you like best of the product and service?
- 5.b. Is there something you dislike of the product or service?
- 5.c. Would you like to change or improve the product or service?
6. How has your life changed since you have solar energy?
7. Do you think having solar energy is important for your family?
8. Is there more money or greater savings since you received your solar home system?

9.a. What is your satisfaction with the product and service? Choose a face.



- 9.b. why did you choose that face?
10. Would you recommend the product or service?
11. Any other comment?

Appendix 4

Miller Center and its mission

Miller Center for Social Entrepreneurship accelerates global, innovation-based entrepreneurship in service to humanity by helping social entrepreneurs address the problems of poverty, empowering women, and building resilience to climate change. As of June 2016, Miller Center has served over 570 social entrepreneurs that have collectively impacted the lives of over 160 million individuals around the world.