

LiA Final Project – Poverty Stoplight Methodology in Paraguay

Over this past summer, I had the pleasure of spending eight weeks living in Asunción, Paraguay working for the NGO Fundación Paraguaya. The Fundación's mission is the development of sustainable solutions to overcome multi-dimensional poverty through the channels of microfinance, entrepreneurship education, self-sustainable agricultural schools, and their Poverty Stoplight program. It was with their Poverty Stoplight Methodology team that I conducted my LiA project under.

The Poverty Stoplight

Relatively early on in my internship, me and the other interns had the pleasure of sitting down and being able to speak with the founder of Fundación Paraguaya and former mayor of Asunción, Martin Burt. Martin created the Fundación over 40 years ago in 1985 while Paraguay was still under the dictatorial regime of Alfredo Stroessner. It started as a microfinance organization, the first to exist in Paraguay, where it serviced out small monetary loans to small business and entrepreneurs, especially female microentrepreneurs. In the coming years, the Fundación would expand from just microfinance into also providing entrepreneurial education for young people living in Paraguay.



However, Martin spoke about the surprise he felt when he would go out and meet the different families and individuals that had received loans from their microfinance programs just to still see them living in impoverished conditions. Despite receiving the monetary relief that should have helped these families escape poverty, very little had changed. It was from this realization that money may not be enough that Martin realized that the Fundación would need to combat multi-dimensional poverty to create change, prompting him to create the Poverty Stoplight program.

The Stoplight is both a self-measurement tool and a coaching methodology to bring families out of poverty. With the guide of a mentor, families take a simple online survey that allows them to self-assess their situation across 50 indicators grouped into six life dimensions. Using simple visuals and stoplight colours (red for extreme poverty, yellow for moderate poverty, and green for no poverty), a Life Map is co-designed with the mentors to implement specific actions to improve key red and yellow indicators into green.

While the Stoplight was originally created and implemented in Paraguay, the methodology is now currently being run in 59 countries through 800 different organizations. However, what say educational, or sanitation poverty looks like in Paraguay is going to look very different to what that same metric may look like in Tanzania which is going to look different from the UK. That is where the methodology team that I spent my time with comes into play. The methodology team oversees helping adapt the Stoplight to different socio-economic contexts, including different regions within the same country. Throughout my eight weeks, I was provided with a variety of different tasks to help the team with.

Catalyst Now

The first main task that I received from the Stoplight team upon my arrival into Asunción was to help write a paper for *Catalyst Now*. *Catalyst Now* is a publication platform where social entrepreneurs, international NGOs, and civil society organisations share their innovative, people-centric approaches to achieve the Sustainable Development Goals.

The platform had reached out to the Fundación to write some papers detailing the work and goals of Poverty Stoplight program, and I was tasked with helping to write one. Writing this article was done in collaboration with the global outreach team at the Fundación, and they were the ones that brainstormed the different articles ideas that they wanted me to choose from. The proposed title of the topic I ended up choosing to write about was “From Passive Beneficiaries to Active Architects.”

The main premise of the paper was to focus on how the Stoplight allows families to initiate and guide their own change. For decades, the battle against poverty has largely been led by outsiders armed with surveys and numbers but not any on-the-ground experience. This top-down approach typically treats those living in poverty as passive recipients of aid rather than fully fleshed individuals capable of acknowledging what their family truly needs.

With the Stoplight’s basis in self-assessment, families are able to guide and choose which indicators they want to focus their Life Map on rather than a simple broad monetary relief program. With this, the change becomes rooted in individual autonomy and contextual relevance specific to the Stoplight’s participants.

My favourite aspect of writing up this paper was being able to read the different stories of how the Stoplight had affected different people's sense of individual agency. Seeing people come to the realization that they could take control of their own lives to reach for their once distant dreams and goals was amazing to read about.

Cerrito

Cerrito is a small rural town, located about 50 km outside of Asunción. The majority of the town is farmers, and the large indigenous presence in the population from the Qom community leads to a mix of Guaraní, the indigenous language, and Spanish being spoken. This tiny town has also emerged as the basis for a strong change initiative spearheaded by the Fundación.

It started in 2003 with the foundation of the Cerrito Agricultural School, a self-sustainable school based on the model of learning by doing, selling, and earning. The program lasts for three years where alongside classes students develop entrepreneurship skills by working jobs in the school hotel, the Cheese Factory, bakery, gardening, and more. Additionally, a large portion of these students move onto higher education at a much higher rate than the national average.

A couple weeks in I was able to go out and actually visit the school. While there, I was able to speak with students and teachers about their experiences at the school. They spoke highly about the sense of freedom and independence that the model fosters by allowing them to help manage businesses. Additionally, I was taken on a tour of the Cheese Factory where the cheese production was being entirely run by students and then provided with lunch cooked entirely with materials sourced from the school itself.



However, as successful as the school is, it really only targets and affects the youth of Paraguay and not the wider population. As such, in 2017, the Fundación launched the Cerrito Initiative, a multi-step process to help the region grow. When the initiative first started, only 28% of families

had a stable income and over 65% lived on less than 200 pounds a month. The initial step was to get as many families as possible enrolled into the Poverty Stoplight program and interacting with a mentor. By 2018, over 1,066 indicators had shifted from red or yellow to green.

Over the last eight years, enormous amount of work has gone into Cerrito from both the Fundación and the actual community living there. I was assigned to write up a report detailing the different activities and change that Cerrito has fostered during the period. This meant pouring over many documents that had been collated over time to create a timeline over the various actions.

For the report, I additionally paid specific attention to the indigenous Qom community of Cerrito and their story. The Qom women had begun organising more formally through the creation of artisan communities. This allowed over 100 women to receive formal business and digital skills training to improve the quality and visibility of their handcrafted goods. The Qom community also came together to successfully negotiate access to government subsidies for their fishing activities, a key step towards securing sustainable livelihoods.

When I was writing, my main goal was not to simply highlight the Fundación's work, but rather make clear how Cerrito took change into their hands rather than being imposed by outside action. The families in Cerrito were the ones that identified their community's needs, proposed solutions, and then followed through on them. A culture of shared responsibility emerged where neighbours were inspired by neighbours to help create a better place. I wanted to make it abundantly clear that while the Fundación may have provided the resources, it was the people of Cerrito that spearheaded and masterminded the transformation.

Translational Work

Throughout my eight weeks, I was often given various documents to help and translate from Spanish into English in order to be distributed to partnering organisations from outside the Latin world. While seemingly a relatively straightforward and easy task, the main difficulties emerged both from the level of sophistication within the different documents' languages and, more importantly, the fact that I could only understand Spanish at a very basic level.

While this fact should have seemingly excluded me from the task, by being the only present intern or Fundación employee with English as a native language, I had a unique advantage when it came to creating a smoother flow for the translated writing. When doing the first initial translation of the Spanish documents, I would leverage simple translational tools available on the internet such as Google Translate to provide a general outline and translation to base later edits off of. Naturally, Google Translate would very rarely provide a perfect translation and often had sentence structures based off those found in Spanish rather than English.

The majority of my editing time to these translations thus involved me restricting the directly translated words into a sentence easily digestible and precise in its meaning and purpose. Additionally, because most of the works that I was translating were various instruction manuals for Stoplight implementation, there were large amounts of technical words that Google Translate often struggled with finding direct comparisons to in the English language. For those, I would often take the translation into my own hands by finding the precise definition and meaning of the word in Spanish and then deciding myself what the closest English comparison would likely be to put in its place.

University Dropout Diagnostic

The largest task that I had during my time at the Fundación, and the one that also posed the most challenges for me, was creating a predictive diagnostic model for university dropout risk. In Paraguay, studies suggest that only about 10% of those who enrol in higher education complete their studies, meaning some 90% end up dropping out, a staggeringly high figure. However, as university dropout is likely not contained to simply an educational problem but rather deeply intertwined with various aspects of multi-dimensional poverty and inequality, the Fundación had been interested in putting in some interventions.

The Fundación had recently developed a spin-off tool called the Alcanza Stoplight that adapted the Poverty Stoplight specifically to an educational context. This new Stoplight measured risk factors across different dimensions of a student's life, ranging from financial stability and digital access to emotional wellbeing and family support systems. My job was to use data from this tool to begin building a diagnostic model that could help predict which students were most at risk of dropping out based on the colours of their Stoplight indicators.

My first issue came with gaining access to the actual Alcanza data to start running any regressions. As this data was coming from real university students with their names included, the Fundación could not just hand over the information to me for privacy reasons. As such, I needed to fill out various liability and data release forms that took over two weeks to fully process and go through.

Once I actually received the data, I decided to experiment with a LASSO logistic regression model. The advantage of this method is that it can handle a large number of potential predictors while automatically penalising those that contribute little to the model, shrinking their coefficients down toward zero. Since the Alcanza Stoplight feature 42 different indicators within its survey, being able to isolate out which factors most greatly contribute to university dropout risk was highly useful.

However, there was one major issue with the data that really limited its predictive power. That issue was that the data was severely lacking in quantity. When the Alcanza Stoplight was originally tested with students, there were about 300 that were selected into the program. While that may be a fine number when testing two or three variables, it was not nearly enough data points for trying to run a regression with 42 indicators in the mix. As such, overfitting, which is where the model would work on the sample data but not to new students, posed a major risk in my regression. I relied on cross-validation methods to test the robustness of the predictions, but even then, I had to be realistic about the limitations.

At the end of the regression, I found that the indicators that would cause dropout risk to decrease the most if switched from red or yellow to green were income, physical activity, student-teacher interactions, participation in class, and growth mindset. All served as plausible key indicators for both university staff and Fundación mentors to possibly focus on.

While I reported these findings to the methodology team, I made sure to make it clear the undeniable flaws in the model due to the lack of full data. As such, I also provided a plan for possible next steps with the topic of university dropout. I proposed that the Fundación gather an extremely large number of students with high predictive power and run an RCT by having half the students assigned to Stoplight intervention and half serve as a control. Thus, interventions can be tracked for the treated group and by collecting follow-up data every few months from both groups, comparisons can be made between the two to see the true effectiveness of the Stoplight on dropout risk.

Looking back, this was definitely the most demanding but also the most meaningful part of my time in Paraguay. What made this project particularly rewarding in my eyes was the potential real-world impact. If done well, the diagnostic model could allow universities and NGOs to identify vulnerable students early on, long before they reached the point of dropping out. Additionally, it pushed me out of my comfort zone technically, forced me to grapple with messy and imperfect data, and taught me how to balance rigour with practical constraints. While this was clearly only the first step in a much longer process, I was glad to be able to contribute in some small way.

Conclusion

Overall, my eight weeks in Paraguay with Fundación Paraguaya gave me the chance to connect with people and conduct research that could directly lead to a real-world impact. Whether it was drafting articles for an international platform, compiling reports on community transformation in Cerrito, translating materials for global partners, or building an early-stage diagnostic model for university dropout, each project allowed me to see how the Poverty Stoplight could be applied in a new context. What stood out to me most during my time at the Fundación was how vital taking

a bottom-up approach to tackling multi-dimensional poverty can be versus the traditional top-down approach. From so many of the different families I read about and met, they were the ones in charge of changing their own fate instead of any outsider like me.

This LiA project also pushed me out of my comfort zone, from working in Spanish to grappling with imperfect datasets, but in doing so it showed me how leadership often comes through persistence and adaptability rather than having all the answers from the outset. I felt that I grew so much during my time in Paraguay.

Lastly, I need to give a massive thank-you to the entire Fundación team that I spent my time with. The Poverty Stoplight methodology team were all so kind, understanding, and helpful when it came to any of my tasks, serving not only as mentors but also as friends. And to my fellow interns, you made this whole experience so much more fun and exciting as we went on this journey together.

