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Social Impact Bond Feasibility Study

Children and Youth at Risk: The Projecto Família Program

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Abstract

Social impact bonds are an increasingly popular method of unlocking typical social investment barriers and fuelling social innovation. This feasibility study aims to understand whether a social impact bond is a suitable tool for decreasing unnecessary foster care placements in Portugal, which have been proven to cause significant social and financial damage to societies. This research question is answered through a financial model which combines the costs of this social problem with Projecto Família's intervention model, a leading intensive family preservation service. Main findings suggest using SIB funding for a 5-year project with the goal of generating the proper impact measurement metrics lacking in the field.

Keywords: social impact bonds; feasibility study; unnecessary foster care placements; intensive family preservation programs

Foreword

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Section 1: Understanding Social Impact Bonds and SIB feasibility studies

Social organizations as innovators with outdated business models

In a world where societies face complex and often deeply-rooted social problems, third sector organizations have risen to become great vehicles of impact, tackling these issues through their ability to innovate, either by testing and rolling-out new programs or replicating best practices from established intervention models across the world.

However, the business models and management methodologies used by these social organizations generally have not seen the same level of innovation as the social programs being delivered to communities, which explains why so many countries today have their entire social sector largely dependent on grants, donations and governmental agreements (Bridges Ventures, "Choosing Social Impact Bonds", 2014).

The role of the government and standard service delivery contracts

Working as natural partners of social organizations due to their common goal of helping local communities, governments have been trying to do more with the same or fewer resources despite increasingly tight public budgets. However, because the majority of available funding is channeled directly to help those in need, little room tends to remain for investing in preventive services. This perpetuates rooted social problems, since the lack of a long-term investment strategy often prevents the government from funding programs that tackle its main causes, compromising future generations (Laboratório de Investimento Social, 2015."A Blueprint for a Nascent Social Investment Market").

Working to reach their shared objectives, agents from social and public sectors traditionally cooperate through service delivery contracts signed with a 'fee for service' structure, which inevitably discourages efficiency and innovation on two important levels: first of all, by not linking revenues with results, the contract generates a clear incentive to not go beyond predefined goals. Second and arguably more troublesome than the latter, is the fact that payments tend to be based on outputs rather than outcomes, when outcomes are the ultimate goals that outputs aim to produce. This is a problem because it creates a direct risk for the contractor by forcing him to pay, regardless of the results of the service provided. For an example that facilitates distinguishing outputs from outcomes, please refer to Appendix 1.

The social sector's slow movement towards a results-oriented culture

While the status quo of the last decades was far from efficient, the future of the social sector looks quite promising. Frustrated with the inefficient results of the past, governments and private donors, such as philanthropic foundations, are moving towards outcome-based payments. Social service providers are taking the first steps in order to adapt to the investor's mindset, which will allow them to obtain capital and more easily test new intervention models and scale up, while investors are also slowly starting to look for projects with both financial and social returns on investment.

The Portuguese social sector and the social market gap

According to Instituto Nacional de Estatística, between Instituições particulares de solidariedade social (IPSS's), non-governmental organizations and non-profit associations, the social economy in Portugal is comprised of over 55.000 organizations, most of which

operate through financially unsustainable business models that do not meet their financing needs (R. Franco, 2015 "Diagnóstico das ONG em Portugal"). These models inevitably push organizations to focus on the very short-term in order to meet fundraising targets and secure wages for the following months, preventing them from focusing on their social mission. Typical examples are 100% donation and grant-based revenue strategies to provide services for clients with low purchasing power.

Lack of coordination and impact measurement

Under these conditions, it is not surprising to see that there is little evidence of coordination or economies of scale throughout the third sector. This lack of focus on the social mission tends to scatter organizations, leading to weak communication and overlapping activities between similar service providers (Laboratório de Investimento Social, 2015."A Blueprint for a Nascent Social Investment Market"). Considering the fact that it is not rare for some of these organizations to work with the same target populations, reliably estimating the real impact generated by each individual program becomes nearly unfeasible, especially since impact measurement already tends to be deprioritized due to a lack of financial and technical resources.

The funding gap in social investment markets

Unable to analyze proper impact metrics, social investors struggle to understand which social service providers are truly investment-ready, resulting in a typical case of market failure: social investors want to finance efficient programs, therefore there is enough supply, and social organizations are desperate for funding, which evidently implies there is sufficient demand as well. Nevertheless, the conditions for the final handshake remain out of reach –

supply and demand remain unmatched due to language barriers and the inefficiency of existing financial products that meet the needs of both parties. A self-reinforcing loop is at play: the lack of cash reserves forces organizations to focus on fundraising instead of working on improving efficiency and impact measurement, which in turn is exactly what prevents investors from providing them with the capital they could use to improve their programs (Bridges Ventures, "Choosing Social Impact Bonds", 2014). Due to its own budgetary constraints, the government has revealed to be too risk-averse to replace the role of these social investors, meaning that the market gap needs to be addressed through third parties, and that is where financial intermediaries, capacity building and innovative financial tools come into the equation, addressed briefly in appendix 2.

The social impact bond as a stakeholder alignment tool

A social impact bond (SIB) is a relatively new[1] investment tool designed to remove some of the barriers that prevent social investment from taking place. It does so by aligning the objectives of three parties: the investor, which provides capital upfront and expects social and financial returns on investment; the service provider, which uses the capital to deliver its program to target beneficiaries; and the outcome payer, who only pays investors back after an independent evaluator shows evidence that the intended results were achieved.

The outcome payer tends to be a country's government, and is the one to define the outcomes it is willing to pay for. Recalling the difference between outputs and outcomes; outputs tend to be activities such as the number of hours of training provided, while outcomes tend to be goals at the end of the impact chain such as number of successful job placements.

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[1] The first social impact bond was launched by Social Finance in 2010.

The service provider is usually a social organization with a strong intervention model that shows promising results in dealing with a relevant social issue, and the investor can be any appropriate entity or private donor with the capital to fund the program until completion, absorbing all the risk and incurring the loss if the outcome targets are not met.

Both the achievement of desired outcomes and the impact of the entire program are independently measured by an external evaluator, to promote accuracy and transparency.

According to Impact Investing Australia, there are currently over thirty social impact bonds operating in the UK alone, and more than one-hundred in the design phase worldwide. The credibility and versatility of this particular model is gaining strong momentum, to the point where it is now being used for widely different purposes, from funding state-of-the-art pilot programs, such as Portugal's recently launched "Academia de Código" project to improve primary education, or the "pay-for-success" model applied in the United States, where SIBs are used to massively scale up successful programs with a strong proof of concept after being properly evaluated through randomized control trials.

By attaching payments to outcomes instead of outputs, SIBs do more than provide funding for innovative social projects – they effectively nudge organizations to behave as they would if selling directly to consumers: improving their value propositions and encouraging well-structured processes such as the performance management systems that the social sector is in dire need of.

This feasibility study assesses whether a social impact bond is an appropriate model to provide additional funding to one of Portugal's leading Intensive Family Preservation Services (IFPS), Projecto Família. Managed by Movimento Defesa da Vida (MDV) and

based on the classic Homebuilders model developed in the US during the 1970's. Its goal is simple and clear to everyone in the organization: to work together with families so parents are able to retain custody of their children, avoiding institutionalizations whenever possible under the belief that both parents and children tend to be better-off by staying together.

Methodology overview for a social impact bond feasibility study

Feasibility studies can be summarized as a logical, sequential set of questions and answers. When developing them, researchers have two main goals: to understand if a SIB is a valid tool to tackle an entrenched social problem, and if so, to suggest different scenarios on how that SIB could be structured and why. The flowcharts below[2] summarize the entire process, which naturally became the foundation for the format of this work project.

1 - Defining the social problem	
Social problem tree: main causes & effects	Understanding the target population

2 - Finding a suitable intervention model	
What are the real needs?	Which service providers are best suited to address them?

3 - Building the value-for-money case	
Contacting potential providers and estimating delivery costs	Pricing target outcomes

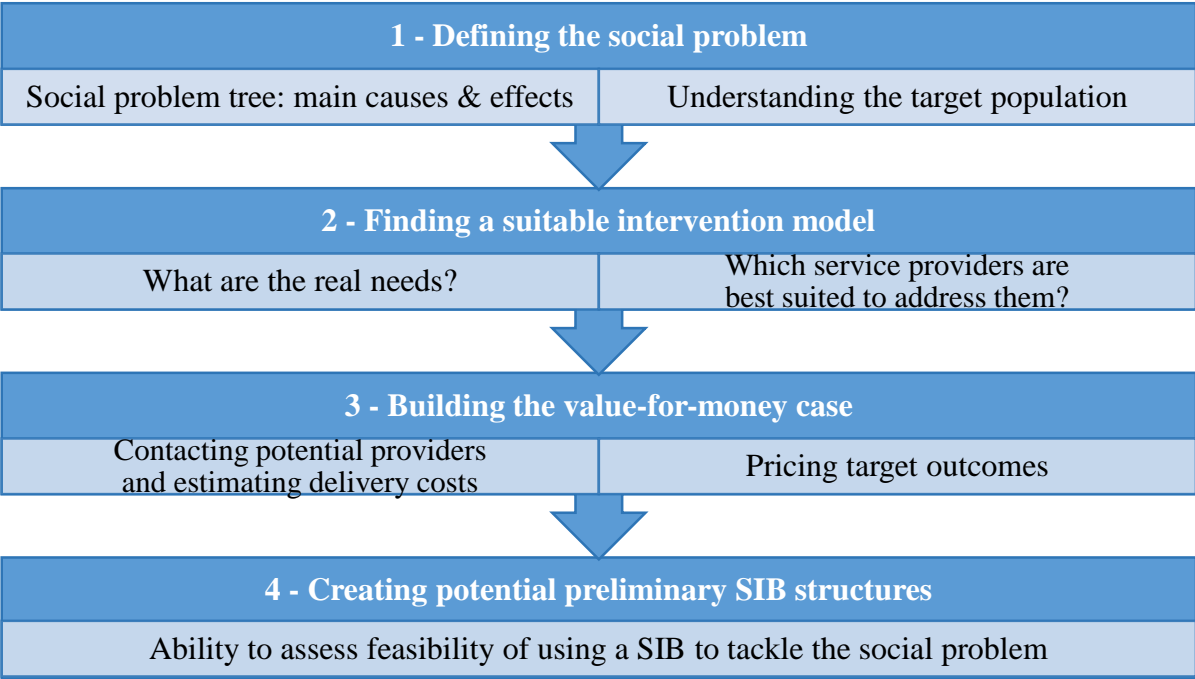| 4 - Creating potential preliminary SIB structures |
| --- |
| Ability to assess feasibility of using a SIB to tackle the social problem |

Chart #1: the social impact bond feasibility study framework

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[2] The presented methodology was developed by Social Finance UK.

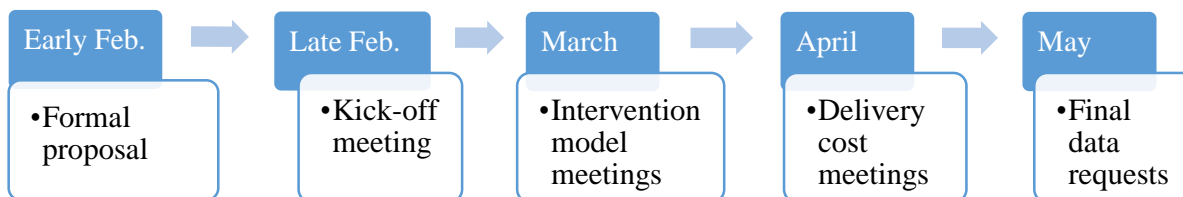| Early Feb.		Late Feb.		March		April		May
•Formal proposal		•Kick-off meeting		•Intervention model meetings		•Delivery cost meetings		•Final data requests

Chart #2: Projecto Família's feasibility study agenda for 2015

Section 2: The socioeconomic costs of avoidable foster care placement in Portugal

The Portuguese foster care system

A brief look into the reality of the Portuguese foster care system is required in order to properly discuss what avoidable foster care placement really means. According to CASA's (Caracterização Anual da Situação de Acolhimento das crianças e jovens) latest report from Instituto da Segurança Social, 2143[3] children and teenagers entered the Portuguese foster care system during 2014. Adding beneficiaries who started receiving shelter prior to 2014, the latest number of registered users in the system is close to 8470 members.

While the total number of users in the Portuguese foster care system has decreased approximately 31% in the last ten years, this fact is unfortunately not a sign of a disappearing social problem but instead one of budgetary constraints and a push for alternative solutions that do not require institutionalized foster care. The reality is clear and backed by workers in the field: the number of new children and teenagers registered annually into foster care has been constantly near the system's maximum capacity as shown in the graph below.

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[3] Unless stated otherwise, data on with the Portuguese foster care system is from CASA's report for 2014.
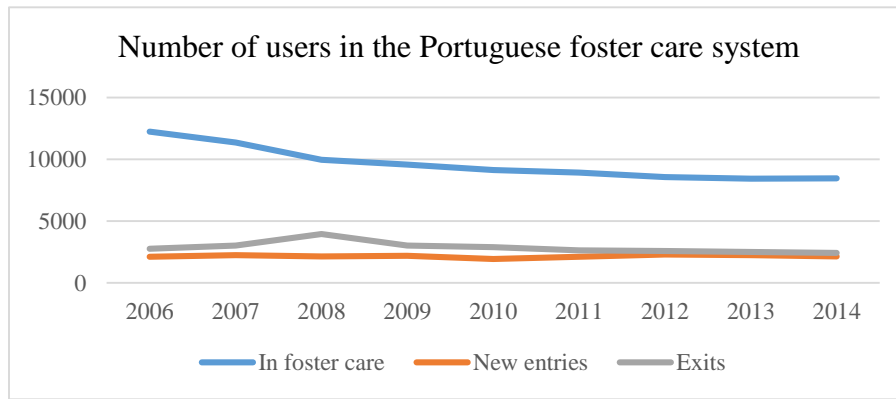
Graph #1: Key numbers of the Portuguese foster care system for 2014

Dominant foster care solutions for the institutionalized youth

Whenever an entity rules in favor of child removal (typically a judge), there are two main options for out-of-home placement in Portugal: Lar de Infância e Juventude (LIJ) homes, which accommodate 63.6% of all beneficiaries, and Centro de Acolhimento Temporário (CAT) centers, which provide a shorter-term shelter to 24.3% of all institutionalized children. Together, these responses sheltered 87.9% of all children in out-of-home placement during 2014.

Centros de Acolhimento Temporário (CAT) have not one, but two main goals. Besides assuring that the basic needs of every child and teenager are met and their rights remain properly protected, these centers are responsible for the development of a "projecto de vida" for every child or teenager it accommodates. Life-projects are created by studying and diagnosing the educational, socioeconomic and medico-psychological situation of the foster care patient, with the goal of setting short and long-term life goals that generate motivation and help beneficiaries look beyond their current circumstances. As the name implies, the nature of this response is a temporary one, capped at 6 months, although the push against

long-term shelter has led many centers to accommodate users for periods up to 2 years (CASA's report for 2013). Still, CAT centers work to prepare their users for the day when they will return to their core families, as long as safety and psycho-affective requirements are met. If these conditions are not verified, placement within a different family is attempted. If both options fail, permanent foster care or, more desirably, the transition to a fully independent life, are the remaining options, with the latter only being available upon achieving very positive feedback in rigorous and mandatory autonomy-preparation modules.

The second mainstream solution is the Lar de Infância e Juventude (LIJ) foster home, which was created for children and teenagers requiring long-term housing. Despite its long-term nature, every user is periodically interviewed in order to understand if there are valid needs justifying his continued placement.

LIJ homes aim to provide a living experience as close to what these children had before they were separated from their families, so that their life-project goals can be achieved and their psychological, social and educational development is assured. This requires the presence of a multidisciplinary team, with two additional elements not required in CAT centers: one to focus on the medium to long-term evolution of every patient, and a second to provide improved health care services.

Providing shelter to 5.388 (63.6%) of all children and teenagers in foster care, long-term placement in LIJ homes is undoubtedly the dominant long-term solution in the Portuguese foster care system, a position that has remained relatively stable over the past decade.

Demographic Outlook

Similarly to previous years, the districts of Lisbon (1.602 -18.9%), Oporto (1.568 – 18.5%) and Braga (613 – 7.2%), lead the ranks of areas with the highest number of foster care users. Most of these users (56.2% - 4.753) are teenagers aged between 12 and 17 years old, while children between 0 and 11 only account for about one third (31.3% - 2.662) of the target population. Older users aged between 18 and 20 are clearly a minority, accounting for the last 12.5%.

Regarding nationalities, data from 2013 shows that 84%[4] of the beneficiaries were identified as Portuguese. The remaining 16% were mainly split among Guinea-Bissau (3.1%), Cape Verde (2.9%), Angola (2.1%) and the Romani ethnicity (1.3%).

Common risk factors

Looking at the main triggers that motivate child removal processes, one can immediately see a field clearly dominated by abandonment and varied forms of negligence, with 60% of all child removal processes beginning because parents left their children alone or uncared for large periods of time, especially among children between 4 and 11 years old. The second most common risk factor (identified as grounds for removal in 35% of all interventions) was exposure to undesirable parenting models, where at least one adult consistently acts as an inadequate role model, promoting anti-social and/or development-hindering behavior, regardless of his or her intention to do so. The third and fourth common factors of misconduct were education (32%) and health-related (30%) forms of negligence. These are good news for preventive services, because they imply that most child removals are not triggered by

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[4] Nationalities were only available in CASA's report for 2013.

extreme, untreatable situations, such as physical or sexual abuse. Adding the fact that these numbers have held relatively constant over time has allowed IFPS organizations to prevent avoidable removals by specializing on techniques to deal with parental negligence.

Length of stay, previous measures and rate of return

Regarding how long most minors typically stay in foster care homes, and how often they are forced to return after leaving, exits from 2014 show that 31.5% of all users stayed for less than 1 year, 47.5% were housed between 1 and 3 years, and the remaining 21% received shelter for more than 3 years. Naturally, these numbers are key once the focus shifts to the financial implications of preventable placement in foster care, due to the high monthly cost associated with each user. Unfortunately, the same report also indicates that 80.8% of all users are on their second form of foster care response, which implies that a vast majority of CAT center beneficiaries remain unable to return to their families or live autonomously after the maximum housing period of 6 months, and are then left with little choice but to be transferred to long-term LIJ homes. Finally, analyzing the subset of users that successfully left the system is the past, 11% of all users currently receiving care are returning members that once were deemed ready for autonomy or a return to their core family.

The social problem tree: key causes and effects of avoidable placement in foster care

After a thorough look into the Portuguese foster care system it becomes much easier to understand what unnecessary placement in foster care entails, along with its implications. Avoidable or unnecessary placement in foster care occurs whenever removing children from their current home will undoubtedly cause more harm than good due to the existence of a

more efficient alternative. A typical example provided by Projecto Família workers is that of the abusive father engaging in domestic violence towards his wife in front of his children. Once signaling entities become aware, child removal services visit the household, which often ends with the minors being placed in foster care instead of receiving temporary housing for both themselves and their mother. This results in an avoidable separation with dire effects for the mother and her children.

Combining previous data from the social problem with the field experience of Projecto Família workers, the following problem tree is proposed:
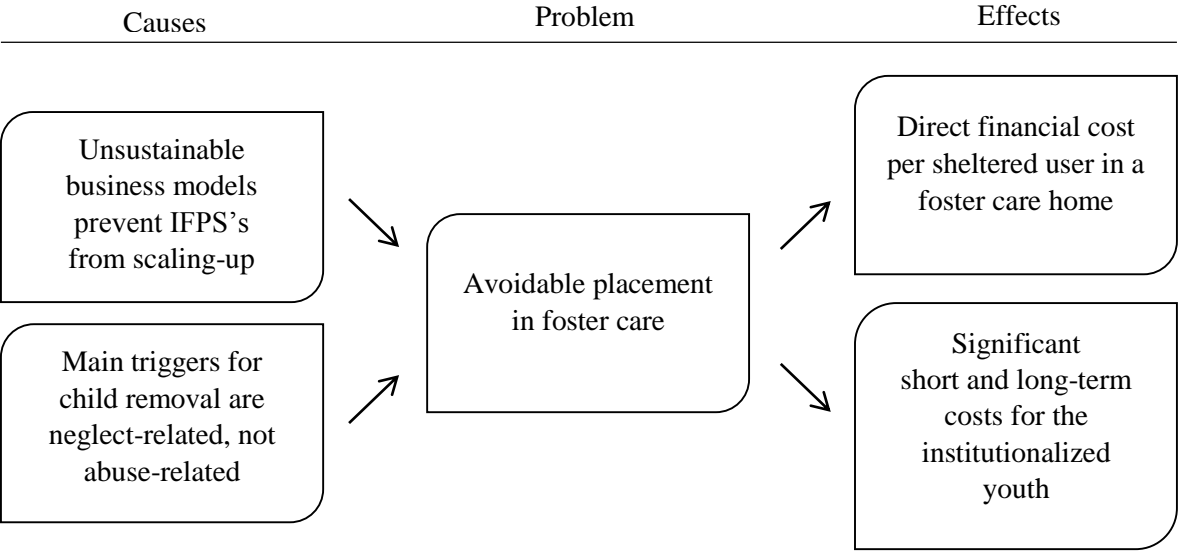
Causes	Problem	Effects

Unsustainable business models prevent IFPS's from scaling-up

Main triggers for child removal are neglect-related, not abuse-related

Avoidable placement in foster care

Direct financial cost per sheltered user in a foster care home

Significant short and long-term costs for the institutionalized youth

Chart #3: Social problem tree diagram: main causes and effects

Key causes: weak business models and parental neglect

The fact that the leading IFPS (Intensive Family Preservation Services) in Portugal rely on donations and cooperation agreements[5] with the government already demonstrates how

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[5] According to Projecto Família's Executive Director.

unsustainable these models are at the moment: IFPS organizations are not able to generate direct revenues to finance the cost of their services. This creates a strong barrier that prevents these organizations from scaling up, regardless of their experience in the field, since providing a superior service and capturing demand for that service do not generate additional income. The result is an inability to serve more users than the yearly budget allows for, resulting in long waiting lists. As previously mentioned, the main triggers of child removals are a lack of supervision and other forms of parental neglect, which are among the softest removal triggers when compared to physical or sexual abuse, making them much easier to prevent through IFPS and thus important sources of avoidable institutionalizations.

Main effects of out-of-home placement in foster care

For most of the twentieth century, little was known about the real long-term impact of foster care placement. Experts in the field knew the reality was harsh, but according the Institute of Research on Poverty a study led by T. McDonald et al. (1993) demonstrated that most classic papers lacked either significant samples or proper econometric methodologies. It was only within the last 20 years that significant bodies of work started to arrive to the field. Perhaps the most popular and sensationalized of them all was a study led by K. Williams from the UK's Ministry of Justice in 2012, which garnered strong media attention when David Cameron quoted one of its findings, which suggests that nearly one out of every four UK prisoners has previously been placed in foster care. This finding was consistent across the world, since a 2008 state-wide survey conducted by the California Department of Corrections and Rehabilitation found a lower but equally significant estimate of 14% among surveyed

inmates. While these findings are mere correlations and do not imply causality, they undeniably hint at the known link between foster care and marginalization, and brought additional attention to the research question at hand.

One of the most relevant bodies of work was led by MIT's J. Doyle (2007), which specifically aimed to measure the long-term consequences of foster care for its users. Leveraging the fact that each child protection investigator showed different tendencies to rule in favor or against institutionalization, Doyle was able to focus on cases of children at risk of removal that were "randomly" removed from their families according to the subjective preferences of each investigator in the sample. The children who were able to remain with their families formed a control group and those who were institutionalized created the treatment group. Doyle then proceeded to look for significant differences in long-term outcomes for each group, namely delinquency, teenage pregnancy and employment. The results suggest that the control group had a higher likelihood of achieving better outcomes among the subset of children whose conditions made it very hard to rule towards removal or preservation. This link corroborates the experience of family support workers working in IFPS, and further highlights removal prevention-based services as a superior solution with higher potential for improving the lives of children and youth at risk.

Financial Implications

When combining the macro numbers of the Portuguese foster care system with Social Security's latest cooperation protocol, which fixed a minimum monthly amount of 700 Euros in financial support per child or teenager in CAT/LIJ out-of-home placement, the financial dimension of this social problem starts to become clearer. A single month of shelter for every

user in the system during 2014 led to an expenditure of over 5.93 million Euros, a figure even more relevant when recalling that 48% of all users that left the system during that year were accommodated between 1 and 3 years.

Additional positive externalities[6] with the potential to generate financial benefits include improvements on the physical and emotional health of both parents and children, higher school engagement, and increases in both income and hours of training received by working members in the family (Welsh Government Social Research, 2014). Even though these indirect outcomes carry medium to long-term social and financial benefits, they were purposely left out of the value-for-money model described in section 4, in order to decrease the complexity and uncertainty that would arise from pricing each additional outcome, allowing for pragmatic results. The developed financial model assesses the feasibility of a social impact bond in this area essentially by incorporating the monthly financial cost of 700€ per foster care user with Projecto Família's intervention costs and removal prevention rate, returning output metrics such as investor IRR, required investment amount and number of prevented removals.

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[6] Family-reported, qualitative improvements.

Section 3: Projecto Família's intervention model

Launched by Movimento Defesa da Vida (MDV) back in 1996, Projecto Família (PF) has grown to become one of the leading IFPS (intensive family preservation services) in Portugal[7]. Its core mission is to prevent the institutionalization of children and teenagers from fragile families through an intensive and customized 6-week support program. The program operates under the field-tested assumption that as long as they receive adequate support, families tend to be able to develop the necessary skills in order to keep their children, regardless of socioeconomic status, race, religion or other specific circumstances. PF's methodology is a direct import from the US-born Families First – Homebuilders (FF-H) model. MDV maintains a close relationship with Michigan's Department of Human Services and Seattle's Institute for Family Development, two cases of successful large-scale FF-H implementations, which allow family support workers in Portugal to receive continuous training and technical support and guarantee that the program is constantly up to date.

Program methodology & client journey

The Families First - Homebuilders model was first developed in 1974 and has since then seen constant evolution. The 2014 program standards provide a clear and concise description of both how the PF program is structured and differentiates itself from other IFPS. The most relevant standards for the model[8] are: working exclusively with a target population, namely families referred by signaling entities whose children are at a major risk of being institutionalized in the near future; immediate response and constant availability, 24 hours a

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[7] In both size and public sector funding.
[8] Based on the Institute for Family Development's full program standards.

day, seven days a week, in order to establish a solid safety net for the family; two families per family support worker, to ensure availability standards and high quality support and 6-week intervention plans with follow-ups up to a year that balance the required time to generate real changes in the behaviors of family members while maintaining a posture of urgency and intensive short-term support. This prevents its services from being taken for granted by families and increases commitment, while maintaining contact and measuring the evolution of family outcomes through follow-up meetings that allow IFPS to track changes in child removal rates over time.
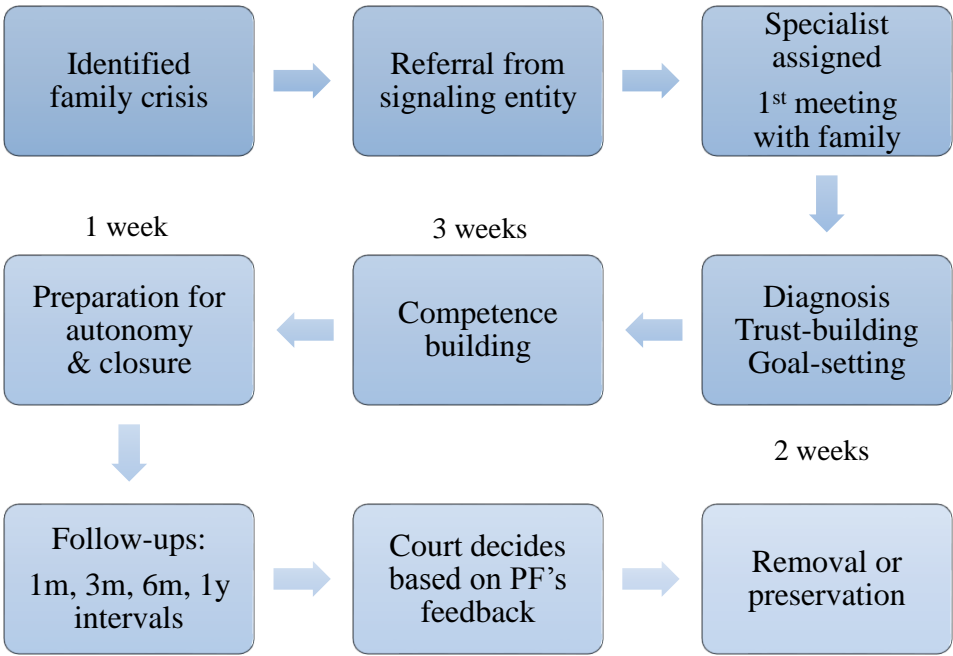

Chart #4: Full client journey of a family accepted into the PF program.

A growing evidence-base highlights the model's potential and the need for further research

Family preservation programs and especially the FF-H model have been the target of a plethora of studies over the last 30 years. These studies, much like the previously mentioned

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papers that looked the long-term effects of foster care, arrived to different conclusions regarding the true efficacy of the FF-H and other prominent models, which only attracted more researchers to the field and reinforced the need for proper impact measurement.

It was only in 2009 that researchers were able to agree that there was enough encouraging and scientifically valid evidence in favor of IFPS models, when K. Nelson et al. published "A Ten Year Review of Family Preservation Research: Building the Evidence Base". Analyzing the latest and most significant studies in the field, the research team was able to confidently suggest that organizations that closely followed the FF-H model were able to successfully and significantly decrease the number of child out-of-home placements when compared with suitable control groups, a finding that corroborated a similar analysis carried out three years earlier researchers from Washington State's Institute for Public Policy titled "IFPS: Program Fidelity Influences Effectiveness". The latter study further suggested that every dollar invested into IFPS generated benefits worth approximately 2.59$, by significantly decreasing child removal rates and medium-term cases of parental abuse and neglect. However, these financial benefits were only observed in families accompanied by service providers who internalized the Homebuilders model (as is the case for Projecto Família), since investments in IFPS that did not adhere to the model with the same level of rigor were unable to generate any significant effects between treatment and control groups.

While today's experts have generally accepted the efficacy of Homebuilders/Families-First based IFPS, a long road remains untraveled in order to better understand the medium and long-term effects of receiving these services. The most accurate studies in the field have focused on presenting short-term impact estimates, and both the experience of workers in the

field and the data obtained thus far point to a significant decay in family preservation rates in the first year after the initial 6 weeks of IFPS, as some families tend to return to their original lifestyles. This fact leaves considerable room for doubt as to whether these interventions are only postponing inevitable institutionalizations or can be a real source of long-term, positive change for the families these organizations work with. A 5-year study conducted by University Associates (US-based research firm) in 1995 aimed to compare Michigan's implementation of the Families First methodology with the standard foster care services, and generated relevant data which besides highlighting the superior results generated by the intervention versus traditional foster care, also suggests that approximately three out of every four families successfully kept its children under their care in the two years following FF-H IFPS. This finding is in line with a more recent evaluation of the Families First model's efficacy, once again based in Michigan but now led by Blythe & Jayaratne (2002), which found an even higher and significant difference of over 30% between treatment and control groups, 12 months after completion of the intervention (the study below was only able to suggest a 17% difference in preservation rates after one year).
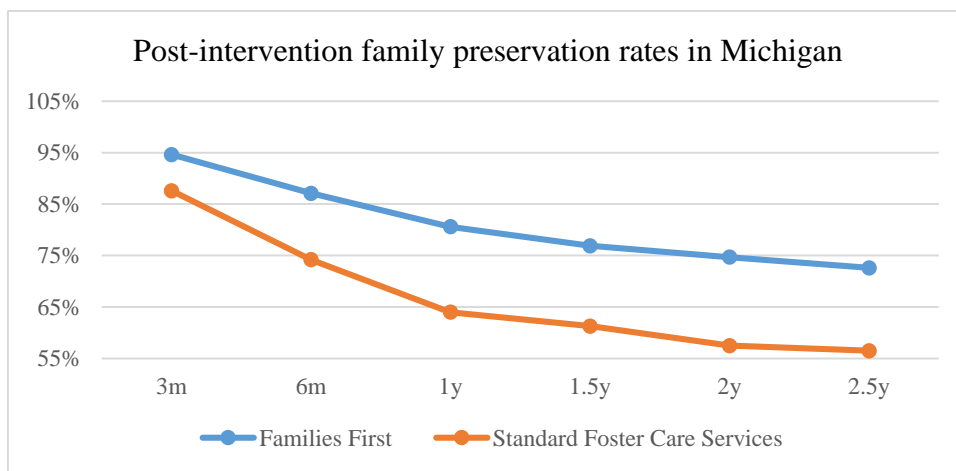
Graph #2: Consistent results over time show how the FF-H model tends to be more effective than mainstream services.

Regarding additional outcome metrics besides child preservation rates, one of the most recent evaluations of the FF-H model aimed to understand its impact with greater length and depth, extending the range of measured family outcomes to include insights on variables related to foster-care placement such as education, employment and social relationships. The initiative was commissioned by the Welsh government, who requested a deep evaluation of Families First interventions taking place between 2012 and 2015. While the study is still under development, data generated so far points towards clear improvements in softer outcomes such as the sense of an improved home environment (59%), the ability for children in families at risk of poverty to achieve their potential (48%) and increased parenting skills (40%). After an overview on the methodology and credibility of the FF-H model, a natural question arises: why aren't services like Projecto Família naturally scaling up if they are internationally recognized as effective, cheaper and superior solutions? At heart of this question lies the link between each section of every SIB feasibility study: it is exactly because even top-tier social service providers often struggle with funding and medium-term financial sustainability that innovative social finance instruments such as SIB's play such a key role in bridging the social investment market failure described in section 1.

Section 4: The social impact bond value-for-money case

Structure overview

The value-for-money case was developed through a financial model built on Microsoft Excel and is the cornerstone of the feasibility study, bringing together all the different components and stakeholders detailed in previous sections. The main goal of the model is to simulate the impact of providing additional funding to Projecto Família, especially regarding the estimated number of prevented institutionalizations and the cost-savings generated by those avoided removals, which directly imply how feasible the investment case really is and how attractive are the returns (if any). Please refer to Appendix 3 for key inputs and outputs of the model.

From the social problem findings, the most important metric incorporated was the monthly cost of 700€ stated by Segurança Social as the minimum monthly support fee for every child or teenager sheltered at CAT and LIJ homes. Because the goal of Projecto Família and all stakeholders is to prevent institutionalizations, the model interprets these 700€ as a source of revenue in the form of cost savings generated after the intervention is delivered, as is traditional for social impact bonds.

Moving on to service delivery, constant meetings with Projecto Família throughout this feasibility study provided the team with enough information to create an accurate understanding of the direct and indirect costs required for its current capacity, estimated at approximately 175 families per year. The organization's client database also made it possible to estimate the family preservation for families that received the intervention in 2013 (the

year with the best available data). The estimate of 82.8% falls close to acceptable values found in relevant literature such as K. Nelson et al. (2009), allowing for interesting suggestions towards the implementation of a social impact bond in this field, which will be described briefly.

The model begins with the aforementioned inputs section, which hosts financial variables (tax rate, debt ratio, etc.) and data on the intervention model such as direct and indirect delivery costs. These include performance management fees for proper impact measurement during and after service provisioning.

A second sheet considers the number of FTE family support workers and supervisors as an input (default values use data from 2013 for consistency in the preservation rate and financial data) and proceeds to estimate how many child removals will be prevented over a 5-year period. This figure is then fed to an extensive sheet of traditional financials such as income and cash-flow statements. These generate estimates of key project outputs, which are: the number and timing of prevented out-of-home placements, total project costs and revenues, the initial investment required (substantially lower than total costs due to recycling revenues), and finally the internal rate of return (IRR) and cost/benefit multiplier per family.

Key scenarios and sensitivity analysis

The results estimated by this type of financial model forecasting are naturally dependent on the accuracy of revenue and cost projections, which in turn rely on an extensive dataset, varying from fully proven figures to assumptions deemed reasonable enough to represent unavailable data.

The following scenarios should be interpreted only as indications of probable outcomes. The limitations section will provide additional guidance towards how to interpret the following results.

Scenario Overview: S1- Expected estimates			
Key outcome	Price	Max.	Discount
Savings/Prevented removal	€ 175.00	€ 700.00	75%
Intervention Model Inputs			
Successful prevention rate			82.8%
Average minimum stay			14 Months
Average family size			2.08
Time to outcome			12 Months
Project Overview			
Prevented child removals			869
Maximum contract value			€ 1,871,270.45
Total project cost			€ 971,123.77
Total Investor requirement			€ 445,161.22
Financial Outputs			
IRR			41%
Revenues/Family			€ 3,712.84
Cost/Family			€ 1,926.83
Cost/Benefit Multiplier			**1.93**

Table #1: overview of project metrics in S1
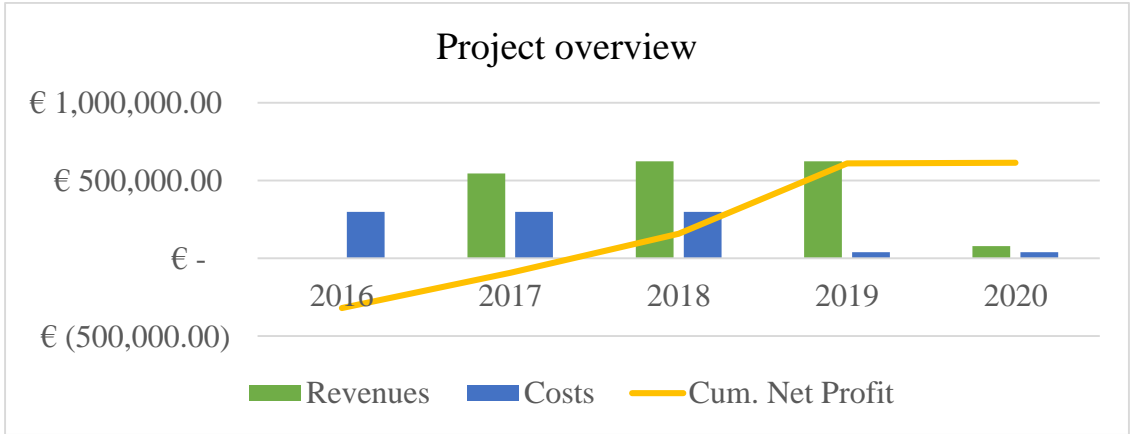
Graph #3: Income statement summary for scenario 1 – expected estimates

The numbers point towards a clear recommendation in favor of using a social impact bond to provide additional funding to Projecto Família, as long as the aforementioned conditions hold. Due diligence and interpretation for these figures, along with the structure of the SIB are detailed in section 5. This section will now cover possible changes in uncertain values and their respective break-even implications.

Scenario Overview S2: Break-even under pessimistic financial conditions			
Key outcome	Price	Max	Discount
Savings/Prevented removal	€ 105.00	€ 700.00	85%
Intervention Model Inputs			
Successful prevention rate			82.8%
Avg Minimum stay			14 Months
Average family size			2.08
Time to outcome			12 Months
Intervention Cost Inputs			
Maximum cost inflation to break-even			17%
Project Overview			
Prevented child removals			869
Maximum contract value			€ 1,122,762.27
Total project cost			€ 1,122,762.27
Total Investor requirement			€ 527,676.59
Financial Outputs			
IRR			0%
Revenues/Family		€	2,227.70
Cost/Family		€	2,227.70
Cost/Benefit Multiplier			1.00

Table #2: key project outputs in S2

S2 and S3 are perhaps more relevant scenarios, because despite deviating from expected values, both provide insights onto how flexible projections can be in order for investors to break-even. Regarding S2, the key changes from S1 involved: the possible inclination from public sector officials to pay below the predicted value per outcome, in this case dropping to

from 25% to 15% of the full value. Maintaining all estimates derived from robust sample sizes, the model indicates that Projecto Família's service delivery costs have room to increase up to 17% before investors incur any losses.

Scenario Overview S3: Minimum success-rate under normal conditions			
Key outcome	Price	Max	Discount
Savings/Prevented removal	€ 175.00	€ 700.00	75%
Intervention Model Inputs			
Break-even prevention rate			43.0%
Average minimum stay			14 Months
Average family size			2.08
Time to outcome			12 Months
Project Overview			
Prevented child removals			451
Maximum contract value			€ 971,121.90
Total project cost			€ 971,121.90
Total Investor requirement			€ 454,273.43
Financial Outputs			
IRR			0%
Revenues/Family			€ 1,926.83
Cost/Family			€ 1,926,83
Cost/Benefit Multiplier			1.00

Table #3: key project outputs in S3

S3 tests how low Projecto Família's success rate may deviate under regular conditions. While the original figure of 82.8% was estimated from a sample of 159 children that PF worked with in 2013, and that figure falls close to observed values according to K. Nelson et al. (2009), there are substantial differences between the settings where those studies were carried out and Projecto Família's local reality. The fact that the minimum, break-even prevention rate is nearly half of the original estimated value for families from 2013 should encourage stakeholders to promote the potential of IFPS in Portugal.

Sensitivity Analysis

Because financial models used for these projections incorporate sets of assumptions, it becomes relevant to understand which volatile variables have the highest impact on key outputs. The sensitivity analysis below shows the impact of a 1% input increase on key project output metrics.

Sensitivity Analysis				
Variable	IRR	Total savings	Total costs	Total investment
Family size	2.16%	1.00%	0.00%	0.00%
Avg. duration	2.16%	1.00%	0.00%	0.00%
Success rate	0.883%	1.00%	0.00%	0.00%
Direct expenses	-0.06%	0.00%	0.04%	0.04%
Indirect costs	-0.12%	0.00%	0.09%	0.08%
Supervisor wage	-0.25%	0.00%	0.17%	0.19%
Family worker wage	-0.66%	0.00%	0.45%	0.49%
Price of outcome	-8.52%	-4.00%	0.00%	0.00%

Table #4: the volatility of each variable on key output metrics

The values shown above highlight the importance estimating a proper success rate and developing a relationship of transparency with the public sector, as these are the two variables with the highest uncertainty and relevant impact on the IRR. The average family size and duration in foster also hold naturally prominent weights due to their linear relationship with both IRR and cost-savings, but should be interpreted very differently: estimations over the course of several years through CASA's reports show that while the average family size has remained relatively stable over time, the same does not hold for the length of stay in CAT/LIJ homes, making it a far more relevant aspect to keep track of in future impact measurement studies.

Section 5: Recommendations, limitations and final remarks

The cost/benefit projections shown above present undoubtedly promising results. However, this was already expected, regardless of the exact figures. Social Finance, a leading non-profit organization working to tackle entrenched social problems through innovative financing models, has stated that family preservation was one of the fields where the value-for-money case is clearer, mainly due to the both high and easy-to-trace monthly cost per institutionalized child, which reinforces the added-value of effective preventive services (Social Finance, 2011. "A Technical Guide to Developing a Social Impact Bond: Vulnerable Children and Young People).

Recommendation #1: tackle current data gaps through a pilot-program style SIB

One of the most important findings of this work project arises from the fact that after combining all publicly available information on the social problem with Projecto Família's family database there is still not enough high-quality intelligence available to make a precise claim towards the family preservation rate of the model in Portugal. While this does not invalidate Projecto Família's ability to efficiently prevent child institutionalizations and generate substantial cost-savings to the Portuguese government, the ideal format for a social impact bond in this field inevitably needs to be centered on calculating proper impact measurement metrics, a model more commonly used for untested pilot programs. This means that instead of other possible SIB formats such those used for scaling-up efficient services, Projecto Família, the projected investment should be applied to fund a pilot-style SIB, with the ultimate goal of creating a proper evidence-base around PF and FF-H models in Portugal.

Recommendation #2: Leverage on Projecto Família's previous field experience in Évora

Considering that the strategic goal for this work project is to setup the groundwork for a future application to Portugal Inovação Social's 15-million Euro fund for SIB proposals, the added applicability of this feasibility study allowed for a concrete debate regarding possible structures of a SIB-funded program. An early draft regarding format and timeline holds the following characteristics:
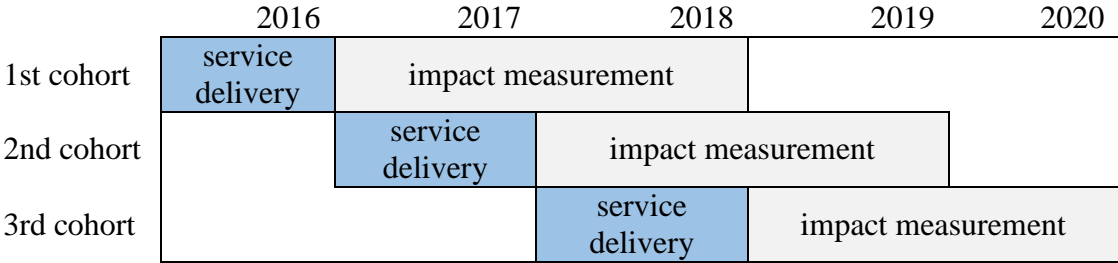
	2016	2017	2018	2019	2020
1st cohort	service delivery	impact measurement			
2nd cohort		service delivery	impact measurement		
3rd cohort			service delivery	impact measurement	

Chart #4: potential timeline of a pilot-program style SIB, used to prove the efficacy of Projecto Família's intervention model

A proper child removal rate (or family preservation rate, as they are exact opposites) should be estimated through the randomized control trial methodology, where the treatment group will be made of families working with PF, while the control group in IFPS SIBs can be made from families receiving standard family support services[9] (such as those supplied by Santa Casa da Misericórdia).

Families at risk of child removal who are identified by CPCJ and are randomly selected for the treatment group will receive the Projecto Família intervention, split into 3 different cohorts, totaling roughly 500 families. Follow-ups regarding the removal rate and evolution

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[9] Methodology used in Michigan's Families-First Effectiveness Study

of the household environment should be made for a period of 2 years after the end of the initial 6-weeks – a period deemed long enough to provide data for a medium-term impact analysis.

The ideal location for such a project appears to be Évora, not only because it is an area where Projecto Família has operated in previously (being forced to leave due to budgetary constraints), but most importantly because the local public sector has already shown interest in both social impact bonds and reigniting their relationship with Projecto Família.

Circumventing data restraints

Due to incomplete information, the financial model could not be structured without including a set of variables that force wider interpretations of results, due to their uncertain nature or simply unproven value. These include: the public sector's willingness to pay a share of the cost-savings, included in the form of a "discount" to the full outcome valuation; Projecto Família's real success rate, which was only possible to estimate for a single year (by analyzing the organization's full 2013 client database and tracking how many children were institutionalized among all who received their services). While the database contained data from over 150 children, enough for significant results, this method lacks a proper treatment vs. control group approach that a randomized control trial can provide. The most interesting approach regarding success measurement is the incremental increase in the preservation rate of PF when compared with standard services, which was impossible to estimate. Even if it did not land far from expected values, an additional factor needs to be considered when interpreting the estimated success rate (82.5%). The foster care system has been operating at

full capacity[10] in the last 3-5 years, which creates a strong top-down pressure to avoid or delay additional institutionalizations. Occasional rulings in favor of removal have seen long waiting periods until implemented, and some judges were reluctant to green-light otherwise simple cases inclined towards foster care placement. Both events erroneously inflate family preservation rates, but are impossible to track. The last limitation is also court-related, involving the <u>number of months between the end of the PF program and the official decision from a court judge or CPCJ</u>, which affects cash-flow performance and cannot be reliably estimated with available data due to the high variance between each case. A 12-month waiting period was confirmed by Projecto Família as the most reasonable value where the vast majority of cases has had enough time to be processed.

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[10] According to CASA's report for 2014 and Projecto Família's board.

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Appendix

Appendix 1: Outputs versus outcomes

Take a program that aims to tackle youth unemployment. Here, outputs will be simply program metrics, such as the number of hours of training provided to the unemployed. Naturally, these metrics alone do not provide information about the impact of the program, which in this example would be what those hours of training actually lead to, and that is why an outcome-based approach matters. Outcomes are the true goals stakeholders are aiming for, such as the number of jobs obtained after attending the training program. Paying for outcomes instead of outputs aligns service providers to work for the real objective, rather than focusing on delivering metrics detached from the project's real purpose, which is why the social investment world has indisputably recognized this reward mechanism as a best practice to eventually fully replace the fee-for-service standard.

Appendix 2: Financial intermediaries and social finance instruments

Properly equipped to speak the language of both supply and demand, financial intermediaries can help social organizations by leading the shift in mindset towards a structured and impact-driven social sector. By providing training on investment readiness, intermediaries teach organizations the skills required to become investment-ready and claim back the time to focus on their mission. The close contact with the social sector also puts these intermediaries in a natural position to advise social investors on investment decisions, mostly through due diligence.

Appendix 3: Key inputs & outputs of the SIB feasibility financial model

Intervention cost inputs

Direct Costs	Value		Staffed	Monthly Estimate	
Family workers	€	1,350.00	9	€	12,150.00
Supervisors	€	1,550.00	3	€	4,650.00
Medical expenses	€	180.00		€	180.00
Travelling expenses	€	594.51		€	594.51
Mobile Communication	€	31.00		€	31.00
Family support	€	283.00		€	283.00

Indirect Costs	Value		Évora ratio	Monthly Estimate	
Top management	€	2,000.00	20%	€	400.00
Middle management	€	1,570.00	15%	€	235.50
Administrative	€	770.00	100%	€	770.00
Accounting	€	500.00	20%	€	100.00
Office supplies	€	287.30	-	€	287.30
Fixed communications	€	196.00	-	€	196.00

Additional Services	Value		Évora ratio	Monthly Estimate	
Psychology	€	1,325.00	100%	€	1,325.00
Employment support	€	1,360.00	100%	€	1,360.00
Transportation	€	88.50	-	€	88.50
Office supplies	€	37.00	-	€	37.00
Rent	€	600.00	-	€	600.00

Performance Management	Value		#Months	Total	
1 PM in FTE	€	1,500.00	60	€	90,000.00

Cost inflator	100%

Intervention model inputs

Program length	6 weeks
Number of FTE family support workers	10.5
Nº Families/worker	2
Nº Families/year/worker	16
Capacity assumption:	100% due to constant waiting lists
Estimated successful prevention rate	82.8%
Weighted avg. minimum stay	14 Months
Avg. family size of target population	2.1
Time to outcome	12 Months
Share of 2014 CAT/LIJ placements	87.90%

Financial inputs

Required reserves	€ 300,000.00
Outcomes inflator	0%
Debt ratio	75%
Tax	20%
Interest rate (Debt)	6%
Cash flow delay	3 months
Working capital contingency	€ 48,556.19
Carry	0%