

A Work Project, presented as part of the requirements for the Award of a Master's Degree in
Management from NOVA – School of Business and Economics

Social Impact Bond Feasibility Study

AEIPS Intervention: *Housing First*

Malou-Anne Wahn #2429

A Work Project carried out under the supervision of:

Prof. António Miguel, coordinator of the Social Investment Lab

January 8, 2015

Abstract

AEIPS is a Portuguese social organization promoting the integration of people with mental health illnesses and/or substance abuse in the community through the intervention model *Housing First*. The philosophy of *Housing First* aims at lifting people out of their homelessness status by providing instant access to individualized and permanent housing as well as support services. *Housing First* projects from all over the world have proved very positive results in terms of residential stability and community integration of its participants. This feasibility study evaluates the suitability of using a Social Impact Bond to fund the *Housing First* intervention of AEIPS in Portugal.

Keywords: *Social Impact Bond, Feasibility Study, AEIPS, Homelessness, Mental Health Issues, Substance Abuse*

Table of Contents

1. Executive summary.....	2
2. Methodology for this work project	3
3. Introduction to the social problem	5
4. Understanding homelessness in Portugal.....	6
5. Identification of a strong intervention model.....	9
5.1. The <i>Housing First</i> intervention model by AEIPS.....	11
5.2. Quantification of intervention performance	12
6. Social Impact Bond Investment Case	14
6.1. Application of a Social Impact Bond to the <i>Housing First</i> intervention	14
6.2. Modelling <i>Housing First</i> Social Impact Bond	17
6.2.1. Intervention scope	17
6.2.2. Intervention costs	18
6.2.3. Outcome metrics	18
6.2.4. Payment mechanism.....	19
6.2.6. Investment structure	21
6.2.5. Public sector value	23
7. Sensitivity analysis.....	24
8. Final remarks	25
References	28
Appendix	30

1. Executive summary

Homelessness is a phenomenon widely spread all over the world with an estimated 100 million people being affected and rising numbers expected [1]. The reason for an increase in Europe lies in more people being at risk-of-poverty due to the crisis that lead to job losses, fewer income, expenditure cuts for social security, health and education. The existence of this social problem in Portugal is striking and will even attract more attention in the near future owing to onerous financial and intangible costs of not tackling homelessness¹.

A new way of funding social projects shall foster innovation in the non-profit sector, which is commonly considered sceptically by non-profit leaders [33], and create more advantages for parties involved. The mechanism of Social Impact Bonds (SIB) adopt a multi-stakeholder approach that incorporates (1) investors who pay for interventions delivered by (2) social organisations in order to improve a specific social outcome that is of social and financial interest to (3) public sector commissioners. If this specific outcome is reached by the social service provider, the commissioner pays back the upfront investment plus a return to the investor.

Housing First is an innovative approach on how to increase the retention of permanent housing of homeless individuals through the prioritization of immediate and independent housing without requirements of “housing readiness”. The method has demonstrated great success and positive externalities in several cities all over the world as well as in pilot projects in Cascais and Lisbon, implemented by *Associação para o Estudo e Integração Psicossocial* (AEIPS). It has been demonstrated that *Housing First* generated cost offsets through reduced public sector usage across shelters, health and justice systems [2].

In light of the opening of a new application round for SIB funding by *Portugal Inovação Social*, AEIPS proposes the implementation of *Housing First* in Coimbra, Vila Nova de Gaia, Aveiro,

¹ Summary of social problem in Appendix 1

Braga, Leiria and Barcelos. The purpose of this feasibility study is to test the suitability of using a SIB to fund the replication of *Housing First* programmes in Portugal. Therefore, the following methodology has been applied: understanding the social problem in Portugal, identifying a strong intervention model, applying the social investment case and testing its sensitivity.

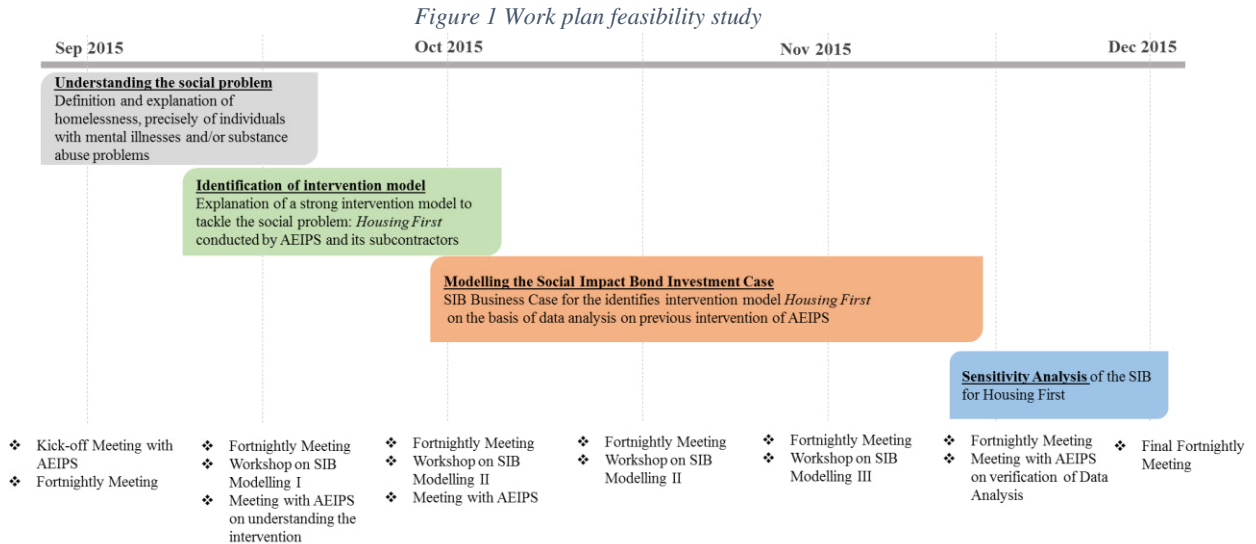
A SIB of in total 4 years length has been defined, tackling 300 homeless in 6 regions of Portugal with intervention periods of each 24 months. The outcome metrics determined measure (1) the retention rate in stable accommodation over 24 months and (2) the number of people that stay continuously housed over the last 6 months. Respectively, (1) 78% and (2) 76% have been set. Applying these variables to the SIB financing model reinforces that the programme has the necessary ingredients to be sustained and does not only generate benefits for participants, but also a positive internal rate of return of 2,7% for an upfront investment of 2.4 million €. Under the assumption that an intervention has the most positive influence on the participants, cost savings of up to 2.2 million € can be reached as an effect of decreased usage of public services.

2. Methodology for this work project

This feasibility study on the *Housing First* intervention model for homeless people with mental illnesses and/or substance abuse in different cities of the north and centre of Portugal is developed as a Management Master Thesis in the format of a Direct Research Internship, integrated within the Social Impact Bond Research Programme by the *Laboratório de Investimento Social*. The programme's mission is to promote the development of Social Impact Bonds by Master students from *NOVA School of Business and Economics* in collaboration with social organizations, directed to apply to funds from *Portugal Inovação Social*.

The methodology applied follows the subsequent structure, also illustrated in figure 1: introducing the topic of homelessness in combination with mental illnesses and/or substance abuse; understanding the social issues, including the triggers, consequences and costs; identifying the

proposed intervention model and its performance evaluation; determining how a SIB can be applied to the proposed intervention model; creating a SIB Business Case and testing its volatility through a sensitivity analysis.



As part of the initial feasibility work, a close cooperation with the Coordinator of AEIPS, Teresa Duarte and the Human Resource Manager, Inês Almas was established. The necessary data to model the SIB were provided either through documents available or in-person meetings. In addition, fortnightly meetings to supervise and mentor the ongoing work took place with the Coordinator of the *Laboratório Investimento Social*, António Miguel. The Direct Research Internship was furthermore accompanied by regular workshops on SIB modelling with the spreadsheet programme Microsoft-Office-Suite Excel. The results of the SIB modelling for AEIPS' *Housing First* intervention in Microsoft Excel are explained in this Master Thesis. The completion of the Direct Research Internship required three deliverables: two blog posts for the website of the *Laboratório Investimento Social*, one on the social problem and the other on the results of the SIB modelling; the Excel financial model as well as the Thesis itself.

3. Introduction to the social problem

Homelessness is a growing problem in cities all over the world. According to the United Nations last official survey from 2005, an estimated 1 billion people are living in poor housing conditions, including 100 million people that are so called rough-sleepers [3] [1]. Housing is a fundamental right that all persons are entitled to under the Portuguese Constitution:

“All have the right to have, for themselves and their family, a house of an adequate size, with comfort and hygienic conditions and which allows the preservation of individual life and family privacy”

(Article 65° of the Portuguese Constitution)

Despite the legal right of adequate housing, the homeless population has not been a priority group when it comes to the allocation of social housing in Portugal. The contribution has even been understood as an issue to be tackled primarily by social services rather than housing services [4]. In light of the economic recession, starting in 2008, and the resulting austerity measures that lead to job losses, lower disposable income, decreasing budgets for health, education and social security, the percentage of Portuguese citizens being at-risk-of-poverty before any social transfer², and therefore more vulnerable to being homeless, increased from 18,5% in 2008 to 23,4% in 2014 [5]. Indeed, the number of homeless has risen by 30% since the beginning of the crisis in 2008 [6]. To effectively respond to the growing threat of homelessness, the *Portuguese National Strategy on Homelessness* has been passed in 2009, recognizing the existence and complexity of the social problem and the need for coordination and creation of new answers. It is also intended to promote the adoption of common definitions, shared information and monitoring systems [4].

“Homelessness is an extreme manifestation of poverty and social exclusion which reduces a person’s productive potential and is a waste of human capital.” (European Commission, 2013a)

² The at-risk-of-poverty rate before social transfers is calculated as the share of people having an equalized disposable income before social transfers that is below the at-risk-of-poverty threshold calculated after social transfers. Pensions, such as old-age and survivors’ (widows’ and widowers’) benefits, are counted as income (before social transfers) and not as social transfers. This indicator examines the hypothetical non-existence of social transfers.

The above statement reinforces the need for action concerning homelessness, which is why in July 2014 the European Commission adopted the partnership agreement, “Europe 2020 Strategy”, with Portugal, aiming at the mobilization of the *Structural and EU Investment Funds* until 2020. Priorities of these funds are inter alia the “reduction of poverty, support for social economy” [7]. As part of the agreement between the European Union and Portugal on the *European Structural Funds*, amounting to 21.46 € billion, the strategy “Portugal 2020”, which focuses on strengthening social cohesion and combating poverty, in particular the creation of policies aiming at tackling the phenomenon of homelessness and housing exclusion was established [8]³.

4. Understanding homelessness in Portugal

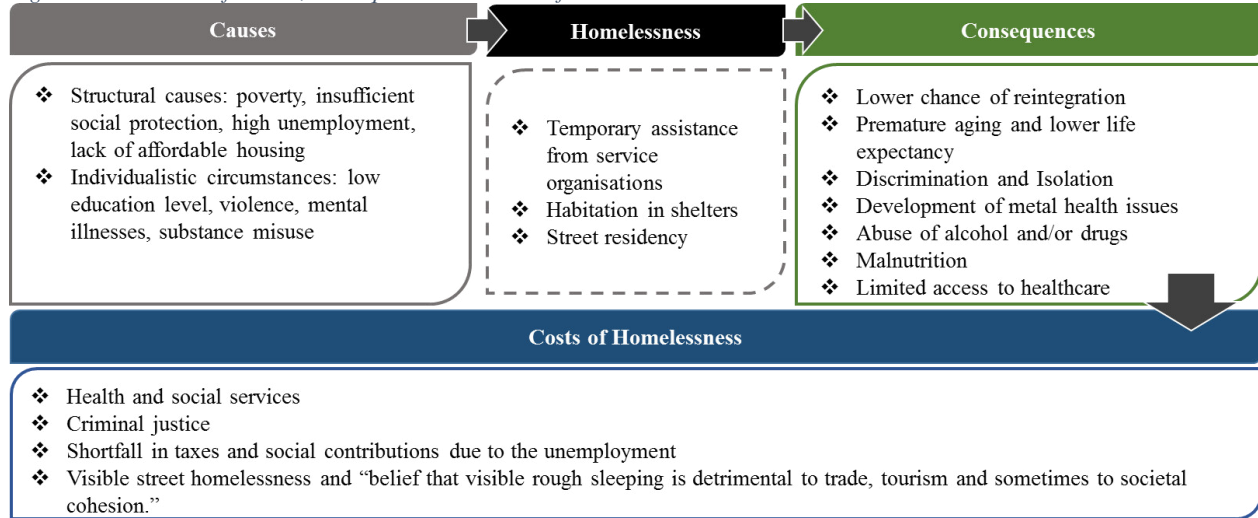
Albeit the phenomenon’s unremitting development in the world, the sociological inquiry has been relatively understudied so far. Moreover, homelessness is not an easily defined term, as the notion encompasses a dimension more exhaustive than a singular definition of “an individual without residence”. According to ETHOS⁴, homelessness is defined as being in a situation of “... living in temporary, insecure or poor-quality housing.” [9]. It is a culmination of a long process of economic hardship, isolation, and social dislocation. Additionally, states of vagrancy may come in varying forms, such as being reliant on assistance from service organizations, habitation in shelters or street residences. However, “shacks, tents, containers and caravans” are considered as a roof by Portuguese public authorities and therefore are not included in the statistics [10]. This definition fails to consider people living in precarious situations who are at the boarder of rough rooflessness⁵ [8]. The following figure 2 illustrates the causes, consequences and costs of homelessness that will be further explained in the forthcoming paragraphs:

³ detailed information on aggregation of funds in Appendix 7

⁴ The ETHOS – European Typology on Homelessness and Housing Exclusion was developed by FEANTSA as a means of finding a common definition on homelessness. It is important to note that this typology is an open exercise which makes abstraction of existing legal definitions in the EU member states.

⁵ People living rough on the streets and people in emergency accommodations.

Figure 2 Illustration of causes, consequences and costs of homelessness



Entering homelessness is most commonly the result of structural and/or individualistic circumstances. Structural explanations are based on the social and economic structures such as high unemployment, poverty, insufficient social protection services as well as a lack of affordable housing. Individualistic explanations suggest that people get homeless due to personal problems such as mental illnesses, substance misuse, low educational level or violence [11].

Mental health issues and substance abuse are not only triggers for homelessness but also consequences. Both have similar impacts on affected persons represented by the inability to pursue daily life duties like employment, maintenance of relationships or households. This group of people is much more likely to become homeless than people in stable environments [12] [13]. *The Federal Task Force on Homelessness and Severe Mental Illness (U.S.)* estimates that at least 20% of homeless people in the US have severe mental illnesses and one third have problems with substance abuse [14]. Observations by AEIPS confirm the data and report that 30% of participants have a co-occurring substance abuse disorder [15].

Generally, the effects of homelessness depend heavily on the length of situation, whereby even a short spell can have an immense influence on a person’s chance of reintegration. Longer spells have irreversible effects, such as a lower life expectancy as well as discrimination and isolation of

the society. It is likely that a homeless person develops “mental health illnesses such as personality disorders, offending behaviour, learning difficulties, physical health problems or vulnerability because of premature aging, abuse of alcohol, drugs, malnutrition as well as limited access to healthcare.” [8]. In any case, escaping homelessness by own means is difficult. Obstacles such as the non-possession of a fixed address, clean and proper clothing and the possibility of transportation impede the job search immensely [8].

The experience of the destitute is understandably a harsh reality as many homeless persons have to contend with abysmal living conditions, pitiable hygiene, unsanitary food, and inadequate nutrition. Evidently, it does not only generate negative impact on the people living the situation, but also costs for the society in general. These include the costs of providing services to prevent and reduce homelessness; the costs occurring for health and social services, which are generally used more frequently by homeless; the costs for criminal justice, which are also more frequently due to an increased alcohol and drug consumption well-known for increasing the level of aggression; shortfall in taxes and social contributions resulting by the unemployment of the homeless; possible costs of visible street homelessness due to the “belief that visible rough sleeping is detrimental to trade, tourism and sometimes to societal cohesion.” [15].

Despite the fact that there are, so far, no official data on the number of homeless on a national level in Portugal, the most credible but unconfirmed numbers from 2013 by the *Social Security Institute Information System* record 4.420 people in “active homeless situations” [16], indicating that they were receiving social support at that point in time. This leads to the assumption of an even higher actual number of homeless individuals, as not every individual asks for social support and is therefore not considered in an “active homeless situation” [16].

Regarding the focus of this feasibility study, the data of several Portuguese cities in the north and centre need to be particularly covered. The *Diagnóstico Social do Município de Coimbra*

indicates that about 700 individuals are in state of vagrancy in Coimbra. Empirical data from institutes working on the field in Vila Nova de Gaia identified 224 individuals, either in temporary housing or rooflessness. In Aveiro the *Diagnóstico Social do Concelho* estimates a total of 70 homeless individuals. The *Diagnóstico da Rede Social* of Leiria identified 23. Braga states the existence of around 30 people in a homeless situation, the same number as in in Barcelos [17].

As for the financial costs related to homelessness in Portugal, little research has been done so far. Studies from FEANTSA, reflecting experts' opinions, giving insights in "per situation" costs - public expenses for a typical journey of a chronically homeless person with drug and alcohol use and mental health problems within a year - amounting to 10.722 €⁶ [18].

5. Identification of a strong intervention model

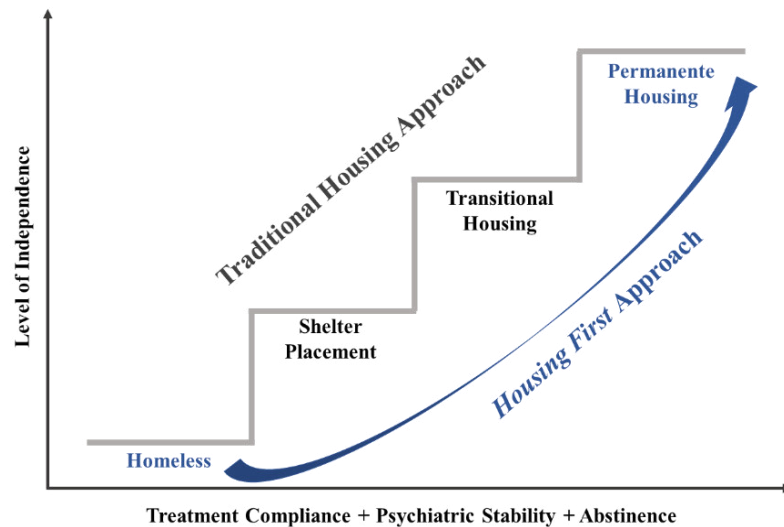
There are several support programmes for homeless people in place, mostly providing temporary housing, such as emergency shelters or treatment programmes. However, these services have not been proved to effectively improve the lasting housing stability and integration in the community. In light of insufficient long-term improvements, Dr. Sam Tsemberis⁷ developed an innovative approach in 1992, intended to address the gaps in existing intervention models – the Pathways' *Housing First* approach. The methodology is premised on the basic underlying principle of housing being a basic human right, and so should not be denied to anyone. Furthermore, it bases itself on the values of consumers' choice, encouraging consumers to identify their own needs and react to these in an individually tailored way [19]. Figure 3 illustrates the differences between the traditional and the *Housing First* approach. It is demonstrated that traditional treatment requires the readiness of participants to be housed by passing through shelter and transitional housing,

⁶ Further aggregated in table table 3 Vignette for potential costs offsets

⁷ Dr. Sam Tsemberis, board in March 11, 1949 in Skoura, Greece is a clinical-community psychologist is the founder and CEO of Pathway to Housing and developed the Housing First model in 1992.

whereas *Housing First* prioritizes permanent housing by skipping housing readiness steps and providing a high degree of independence from the first step on [2].

Figure 3 Traditional versus Housing First approach (Mental Health Commission of Canada (2014) [31])



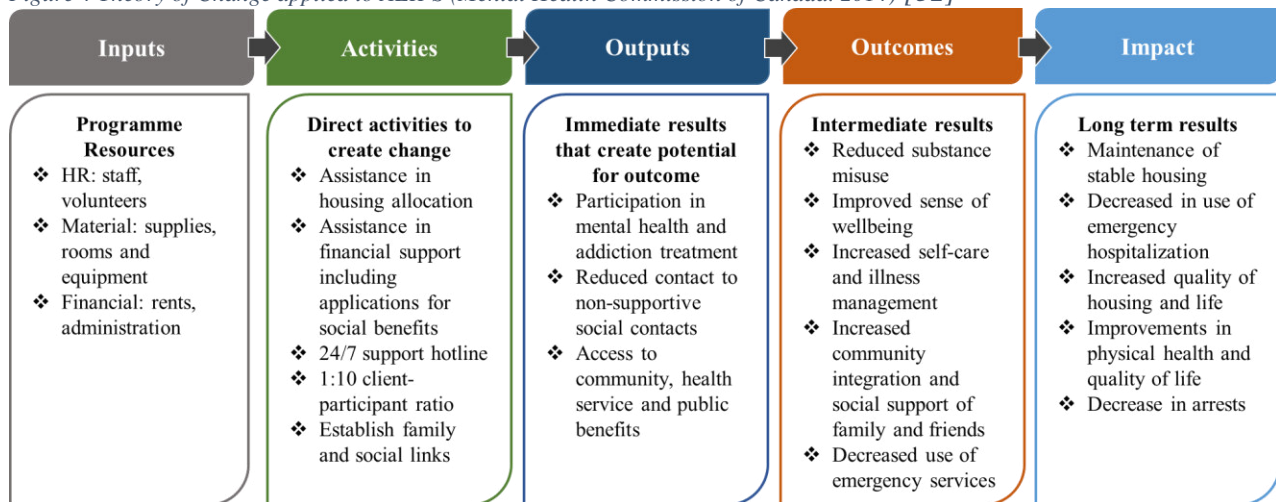
With regard to the individualistic causes of homelessness, *Housing First* is directed on tackling the two most common triggers for homelessness. Especially for mental illnesses and substance abuse, traditional programmes require that individuals firstly “get better” before being allocated to a dwelling as it is assumed “...that individuals with severe psychiatric disabilities cannot maintain independent housing before their clinical status is stabilized” [19]. Studies⁸ using a control group of a traditional programme have shown that “no significant differences in either alcohol or drug use between the 2 groups” [19] was measured. The same result was obtained for psychiatric symptoms. Evidently, a housing readiness can be considered unnecessary as it is not proved to be crucial to maintain stably housed [19].

⁸ 225 participants were randomly assigned to receive housing contingent on treatment and sobriety (control) or to receive immediate housing without treatment prerequisites (experimental). Interviews were conducted every 6 months for 24 months.

5.1. The *Housing First* intervention model by AEIPS

In October 2009 the intervention model was introduced in Lisbon by the organization AEIPS under the legal form of an IPSS⁹ founded in 1987. The organization historically focuses on the integration of people with mental health diseases in state of vagrancy in the society. Figure 4 presents the *Theory of Change*¹⁰ of *Housing First* and points out the steps of AEIPS intervention and their link to the desired outcomes and long-term impact.

Figure 4 Theory of Change applied to AEIPS (Mental Health Commission of Canada. 2014) [32]



The main features of the approach include an instantly provided as well as individually chosen permanent private sector dwelling¹¹, accompanied by constant and adapted social support. In addition, any pre-requirements for entering the programme, such as the participation in psychiatric treatment or attainment of a period of sobriety, are absent and not presupposed, making it simple and fast to enter the programme without any autocratic barriers. Support services for housing and treatment are separated, as it is emphasized that housing is the starting point in the recovery path, autonomy and social integration [15].

⁹ Instituições Particulares de Solidariedade Social: non-profit institutions (on the initiative of individuals and not run by the state or by local government bodies) aiming at giving organized expression to the moral duty of solidarity and justice between individuals.

¹⁰ The Theory of Change is a comprehensive description and illustration of desired changes. It is a mapping of a program's initiative and its desired long-term goals, and helps identifying all conditions that must be in place for the goals to occur.

¹¹ Individualized housing in T0 or T1 apartments. Participants can share their apartments with someone in their personal or family network, if they wish to do so.

Flexible and individual support services are directed to enabling people to self-maintain their homes in the long run through 24/7 availability and weekly home visits that aim at teaching housing management and personal care. The houses and services are provided as long as the participants wish to use these. Furthermore, the staff-participant ratio is kept low (1:10) in order to react to individual needs and support also in other community contexts, such as the accessing of documents, social services and benefits as well as health services. In order to keep a certain self-responsibility, participants contribute 30% of their monthly income, mostly from welfare benefits, towards the rent for the apartments that are mostly in mainstream areas. All of these features are directed at ensuring the increasing “normality” of the person’s life experience and are based on the premise that having a home is a key support for a person’s evolution in society [15].

One of the major challenges of the *Housing First* approach is the registration of the homeless individuals. Once they get housed with a fixed address, some of the tenants may face prison charges from crimes committed earlier in their lives or have creditors claiming back old debts. It is of crucial importance that employees have a strong relationship with their wards to make them face their past and support them in any circumstance. In addition, the organization needs to keep in mind that the change of situation might also contain loneliness and social isolation and therefore makes the backing of staff very important [20].

5.2. Quantification of intervention performance

In its country of origin, the *Housing First* intervention model is recognized by the *U.S. Substance Abuse and Mental Health Administration* as an evidence-based practice due to its proven success in several cities across the United States [21]. An EU-funded evaluation of five *Housing First* projects in Lisbon, Amsterdam, Budapest, Copenhagen and Glasgow tested the model against *Treatment First* projects. Only in Lisbon the access was exclusively for people with mental illnesses and/or substance abuse [20]. In the period of 2009 until 2014, AEIPS has worked with 81

homeless people, achieving an overall retention rate of approximately 83% in an evaluation period of 24 months. During the last 6 months of that period almost 90% of the participants were housed constantly without any interruptions of going back to the streets¹².

Originally, 127 people entered the programme in total, whereas 45 left the programme due to reasons of diverse nature. Four participants were transferred to other more specialized organizations, including detoxification and treatment of substance abuse. Another four participants decided to go to other European countries where they had previously lived and had some kind of family support. Others leaving the programme mostly did so due to movements into autonomous housing with own financial means. Only 17 chose to leave the programme, particularly because they felt dissatisfied with the obligation to contribute 30% of their income or to comply with the basic rules of the condominium. Some of these outputs can, however, be considered temporary as the maintenance of regular contact between the support staff and previous participants lead to request to be reinstated in the project [22].

Additional performance data were collected through qualitative questionnaires and qualitative interviews¹³ of 74 people in 2011 and 2012 and include¹⁴: a decreased use of emergency services of 87%, admissions in psychiatric hospitals decreased by 90% and no participant spent the night in a police station. Moreover, the intervention had great impact on the personally perceived quality of life, represented by increases in personal safety (98%), nutrition and sleeping habits (82%), health and mental health (78%), and social life (52%). Furthermore, almost all participants (73 out of 74) pursued an occupation that even provided monthly income in some cases (29 out of 73) [23].

With regard to the successful results of the intervention, the Declaration of the European Parliament of December 2010 on an EU strategy for the homeless, the motion for a resolution of

¹² See Appendix 2

¹³ Using the *Community Integration Scale* as well as the *Core Service Satisfaction Scale*

¹⁴ See Appendix 3

the European Parliament B7-0475 / 2011 of September 2011 amongst others have been calling for the development of innovative solutions that contribute effectively to the resolution of this problem. It is therefore recommended to implement *Housing First* projects across Europe [17].

6. Social Impact Bond Investment Case

In light of available fund from *Portugal Inovação Social* [24]¹⁵, the significance of the social issue in Portugal, an increasing national and international attention to the problem as well as the positive externalities that could result for citizens and the economy, a SIB is applied to *Housing First* in Portugal. It is now a matter of assessing whether the intervention model *Housing First* suits to be financed through a SIB and if it has the necessary ingredients to resolve homelessness in Portugal.

6.1. Application of a Social Impact Bond to the *Housing First* intervention

Currently, social projects coping homelessness are commissioned based on the service, meaning that governments pay upfront and heavily influence the service provision by prescribing how services should be provided. This way of funding hinders innovation and the ability to focus the delivery of services in the intended outcomes¹⁶, which is why a new funding mechanism, the SIB, also Pay-for Success Bond, has been developed by Social Finance UK in 2010. A SIB is an outcome-based commissioning¹⁷ contract that stipulates the cooperation of socially motivated investors, public authorities and social service providers, and defines the financing mechanism, desired outcomes to be reached in a defined period of time and obligations of the parties. Funds are raised from investors to provide the social service provider with upfront working capital. Repayments by the commissioner and financial returns to the investor depend on the degree to which outcomes are reached, which in turn are validated by an independent evaluator [25].

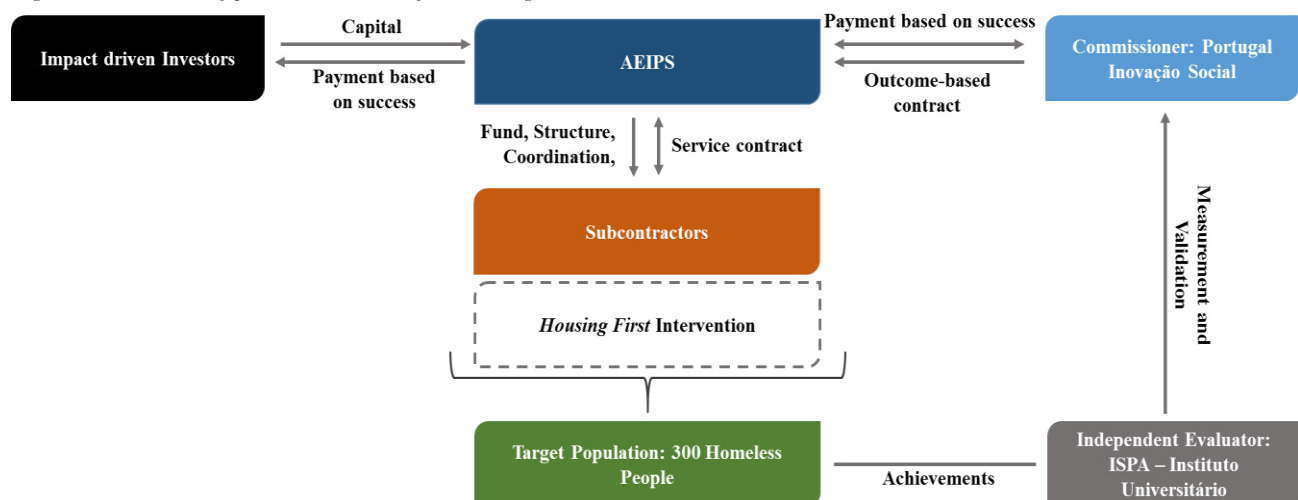
¹⁵ In December 2014, the *Portugal Inovação Social* initiative was launched with 150 million euros from European Structural Funds, entitled with the mission of enabling a social investment ecosystem in Portugal.

¹⁶ See Appendix 4

¹⁷ Outcome-based commissioning further explained in Appendix 5

AEIPS proposes the implementation of the *Housing First* intervention approach in different cities of Portugal, in close cooperation with local organizations¹⁸ through subcontracts. These regions have been chosen based on the fact that the *European Structural and Investment Fund* favours the less developed regions, namely the north and centre of Portugal¹⁹. Applying a SIB to AEIPS would generate several advantages, as it would make upfront funding available, and therefore create more financial flexibility to enable a nation-wide replication, therefore reach more homeless people and increase positive impact. It would also reinforce the evidence based due to the requirement of data and performance management [25]. The structure of a SIB for the *Housing First* intervention is illustrated in the following figure 5:

Figure 5 Illustrative of potential structure for Housing First SIB



In order to model the *Housing First* SIB, a number of features are required:

Defined target population. The eligibility criteria for participants are (1) being in the situation of homelessness; (2) living in public space; being rough sleepers (3) having mental health problems or substance abuse issues or both. So far, the illness or abuse is identified by street workers from partner organizations or the official social worker who observes and questions the homeless

¹⁸ Integrating Association (Coimbra), Piaget Development Association (Vila Nova de Gaia), Florinhas Association do Vouga (Aveiro), Delegation of the Portuguese Red Cross Braga (Braga), Impulsar Association (Leiria), Group of Christian Social Action (Barcelos)

¹⁹ See Appendix 4

individuals and if appropriate, forwards the contact to AEIPS. Other referral sources to identify individuals include hospitals, mental health organizations and other specialist professionals [17].

Strong intervention model. *Housing First* is a best-in-class intervention, which has been implemented by various organizations all over the world. North American experience states that randomly allocated homeless individuals with multiple problems, inter alia substance misuse and mental illnesses, maintain stably housed over a period of 2 years in 80% of the cases. Further evidence is demonstrated by *Streets to Homes*, a Canadian organisation employing *Housing First* with a success rate of 85% over 2 years [26]. The evaluation of results of *Housing First*, implemented by AEIPS in Lisbon, has demonstrated the effectiveness of the approach in addressing the social problem through a positive track record of an 83% retention rate, recommending the implementation on a wider scale [17].

Ability to scale nation-wide. AEIPS is contracting with local social service providers in the proposed areas. This approach will utilize the capacity of existing organizations which are offering comparable interventions and therefore already have a certain experience. Nevertheless, AEIPS will provide necessary training on practices and already existing data to ensure a standardized framework. Regarding the costs of scaling, support service costs are directly driven by the number of participants of the programme, due to a fixed staff-to-client ratio²⁰. The same applies to the rent supplements and other costs such as telecommunication and transportation, as they are tied to the caseload²¹ [17].

Quantifiable outcomes and effective measurement framework. AEIPS is able to effectively maintain contact with participants in order to track outcomes on housing stability as well as usage of public sector services. Currently, the evaluation methodology is made through the collection of

²⁰ See Appendix 6 and 7

²¹ See Appendix 6

quantitative and qualitative data²² in the implementation, integration and the follow-up phase, precisely after 6, 12, 24 and 36 months. This collection will also be relevant to verify the loyalty of projects on the principles of the *Housing First* model. For the purpose of informing for payment in the SIB structure, the data collected after the 24th month is decisive [17].

Quantifiable economic benefit. *Housing First* creates cost offsets, due a drastic reduction in the use of emergency services and significant improvements of participant's quality of life. The intervention is also being more efficient, i.e. with lower costs than traditional responses such as the centres of night accommodation. As a comparison, night shelters (18,60 € per night, per client) and hostels (30,77 € per night per client) are more expensive than 17,30 € for the AEIPS intervention and do not include services or long-term security [23].

6.2. Modelling *Housing First* Social Impact Bond

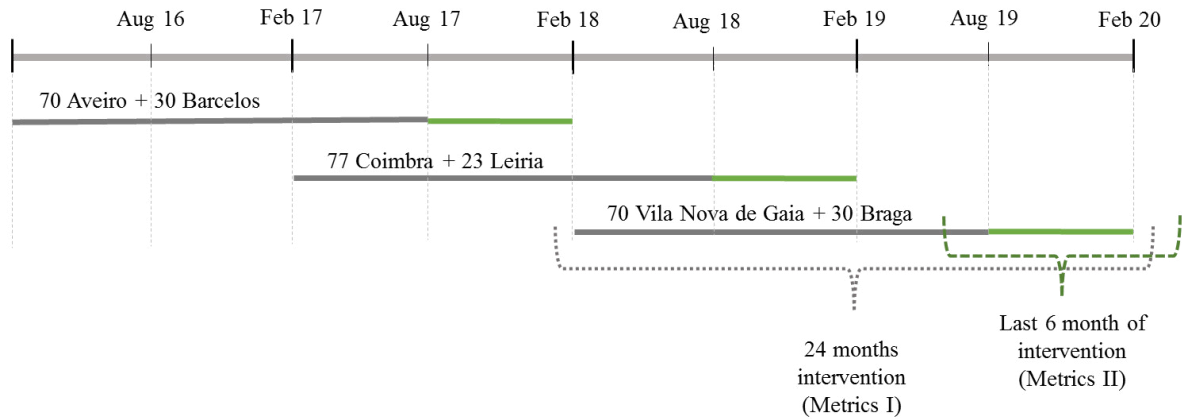
6.2.1. Intervention scope

The methodology of *Housing First* implies an unlimited time of service and housing provision allowing the above defined target group to stay in the houses as long as they need to and even make use of the services, if they have a self-financed housing. Nevertheless, as the structuring of a SIB typically requires a pre-defined period of time, an intervention scope of 24 months for 3 cohorts starting in February of the next years is defined. Consequently, this allows AEIPS to plan its operations over a period of 4 years. The allocation of participants is set in accordance with the need of interventions. More precisely, the amount of homeless individuals in each city is defined with respect to the client-participant ratio that requires a caseload of minimum 70 people in each city²³. Figure 6 illustrates the service delivery in the individual cities as well as starting and end-dates:

²² Method explained in Appendix 3

²³ See Appendix 6

Figure 6 Intervention scope



6.2.2. Intervention costs

The costs of the intervention are calculated on the basis of the pilot in Lisbon and adapted to cost structures in the north and centre of Portugal, which are typically lower than in Lisbon²⁴ [27]. As the cost of intervention is treated as an average in the SIB model and not dependent on the cities, the allocation of participants, as described above, is flexible and can be changed according to the need of interventions. Furthermore, the costs are only displayed as variable and totally dependent on the number of participants²⁵. Overall, the costs of the intervention for a cohort of 300 over 24 months amount to 3.792.294 €, so 526 € per participant per month. The amount is aggregated in rent supplements, salaries and operational costs, amounting to respectively 61%, 37% and 2%²⁶ and incorporates the participants' contribution of 30% of their monthly income, amounting to 53,40 € of 178 € minimum unemployment benefit [17].

6.2.3. Outcome metrics

Outcome metrics are defined to measure the success of the intervention model, following the premise of objectivity and measurability. Under the prime goal of reducing the number of homeless people with either mental illnesses, substance abuse or both, a hybrid mechanism with two outcome metrics is defined: **(1) Percentage of days stably housed over 24 months**, and **(2) Number of**

²⁴ Staff salaries have been decreased by 20%

²⁵ See Appendix 7

²⁶ Further cost breakdown in Appendix 8

people continuously housed over the last 6 months of the intervention period. Through the first frequency outcome metrics the service provider is incentivized to work with individuals that drop out as each percentage day spent in the programme is recorded as positive and triggers a payment. The application of the second binary outcome metrics has the purpose of supporting the constant stay in the programme during the last 6 months of the intervention, so that participants are prepared for a smooth programme exit.

Usually, the baseline for outcome metrics should not only base on empirical observations of the organization itself, but also needs to be set in relation to historical benchmarks. Comparable *Housing First* intervention programmes, such as AHCS from Canada, have tracked the housing stability of mental ill homeless individuals through a randomized trial and came to the following findings for the above mentioned metrics: (1) 73% stably housed, and (2) 62% continuously housed [31]. Respectively, the results of AEIPS past performance were (1) 83%, and (2) 90%. This gap could be due to other structural reasons related to the causes and profiles of homeless in Canada or differences in the fidelity of the programmes with regard to the philosophy of *Housing First*. Indeed, AHCS distinguishes between different need profiles and offers according treatments. Furthermore, the cohort sizes in Canada consisted of about 2.000, being more representative than 81 in Lisbon. In order to neither ignore the success of AEIPS in the past, nor the representativeness of AHCS, the success rates have been adapted to the averages of (1) 78% and (2) 76%.

6.2.4. Payment mechanism

As for the payment mechanism of a SIB, it is mostly driven by either the savings the model initiates for the government or its social innovation. The payment mechanism of this particular SIB, demonstrated in table 1, is based on the success of the social intervention programme indicating that the repayment of the original investment is dependent on the achievements, so the performed efficiency of the service provider. Due to a lack of detailed information on the financial

costs that homelessness is causing in Portugal, a value-based tariff framework rather than savings-driven mechanism has been adopted [28].

Previously, the measures of success as well as the intervention costs have been described on the basis of which a tariff for each outcome needs to be set. Regarding the cohort based payment mechanism, the price per outcome metric unit is based on the costs per percentage day, so 1% equal to 7,3 days ($B * D$), divided by the base case success rate (E). As for the individual achievement payment mechanism, the price per outcome metric unit is determined by the total cost of intervention for one participant ($A * B$) divided by the success rate (C).

Table 1 Payment mechanism

Metrics 1. Cohort based	Calculations
A. Monthly cost (rent supplements + administration + support services)	526,71 €
B. Daily cost ($A / 30.4$ days)	17,30 €
C. Number of days over 24 months	730
D. Number of days per % unit over 24 months	7,3
E. Base case success scenario (# of days housed on average over 24m)*	78 %
F. Price per outcome metric unit ($B * D$)/($E/100$)	161,95 €
Metrics 2. Individual achievement	Calculations
A. Monthly cost (rent supplements + administration + support services)	526,71 €
B. Number of months of intervention	24
C. Success rate	76%
D. Price per outcome metric unit ($A * B$)/C	16.632,87 €

With this circular model two cost-covering outcome prices have been calculated, displayed in table 2. In order to remunerate investors and not only base the payment on costs, a premium payment of 10% is added. Considering that a hybrid payment mechanism is applied to incentivise AEIPS to work with stable and unstable participants, a weighting of 50:50 between individual and cohort based payment mechanism is defined. The actual **cost-covering cohort based payment** is calculated by multiplying the base case outcome unit price (Metrics 1: $F * E$) with the defined weighting. It is then multiplied by the number of participants successfully achieving the pre-set outcome metric and represents one part, depending on weighting, of the revenue obtained. As for the **individual based cost-covering payment**, the price per outcome metric unit (Metrics 2: D) is

multiplied by the weighting. Also in this case, the individual based payment is multiplied by the number of participants who achieved the individuals based outcome metrics.

Table 2 Cost covering payment for metrics 1 and 2

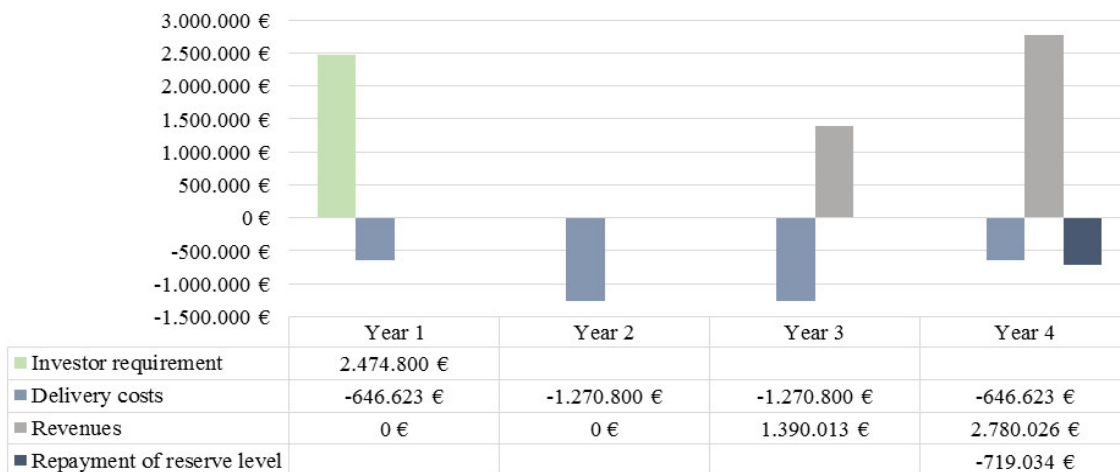
Cohort Based Payment		Percentage of days stably housed over 24 months	
Weight		Cost-covering payment	Premium payment
50%		6.316 €	6.948 €

Individual Based Payment		Number of people continuously housed over the last 6 months	
Weight		Cost-covering payment	Premium payment
50%		8.316 €	9.148 €

6.2.6. Investment structure

In the previous chapters the SIB modelling requirements were defined and adapted to the context of a *Housing First* intervention by AEIPS. Exercising these data into the Excel modelling tool, the following investment structure results, displayed in figures 7 and 8:

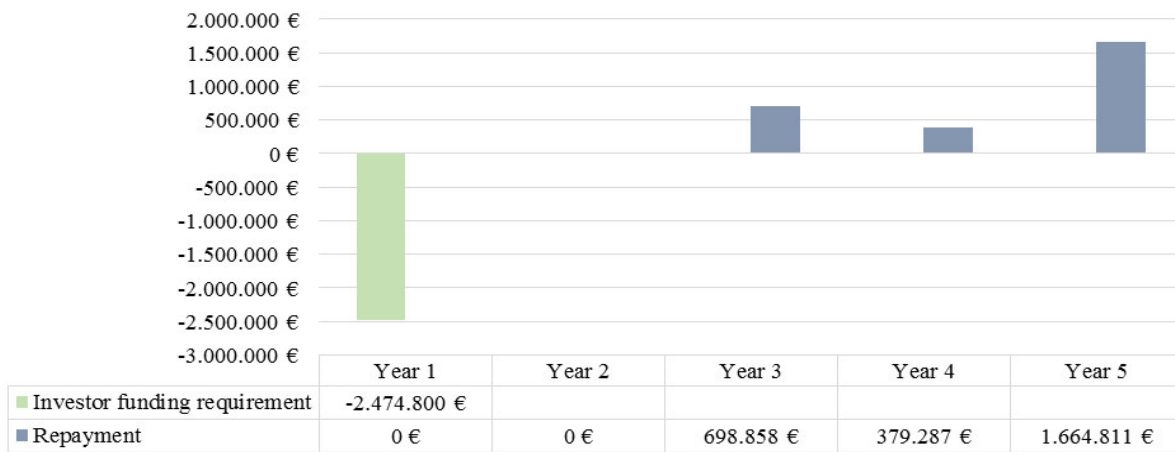
Figure 4 Service provider cash flow



Social service provider cash flow. In year 1 the investor provides an upfront payment amounting to 2.474.800 € to AEIPS for it to start its operation. This amount represents the operational funding needed for the project to run until the first revenue is obtained and incorporates the working capital contingency. The latter is worth 3 months operating costs, here 239.678 €, and is included in the model to ensure that a certain amount of funding is available. Given its contingency purpose, it shall only be used in eventuality and is expected to be returned at the end of the whole intervention period. At the end of the intervention, the service provider needs to pay back a reserve level equal

to 9 months operating costs of 719.034 €, the amount that begins the cash return to investors. Also covered in the cash flow chart are the delivery costs²⁷ that amount to a total of 3.834.845 €. Revenues of in sum 4.170.040 € are obtained from the commissioner and are based on the success rate achieved. This leads to a project surplus of 335.194 €. A tax rate of 20% is assumed.

Figure 5 Investor cash flow



Investor cash flow. The capital requirement of 2.474.800 € will flow once the project begins and will be paid back to investors when the cash balance of the service provider is positive minus the reserve level. The model considers a 3 months delay between outcome achievements and actual payment to investors in order to account for the necessary time of the process. Furthermore, investors receive repayments which will be reimbursed after 29, 41 and 53 months, overall amounting to 2.742.956 €. Hence, investors receive a surplus of 268.156 € corresponding to an IRR of 2,7%. By definition, the internal rate of return determines the profitability of an investment. It is calculated by setting the Net Present Value equal to zero and solve for the discount rate. The higher a project's IRR, the more desirable. In year 5 the cash flow is composed of 971.051 € repayment and 9 months operating costs equal to 719.034 €.

²⁷ Delivery costs displayed in a more detailed way in Appendix 7 and 8

6.2.5. Public sector value

Traditionally, SIB approaches have scaled outcome tariffs as a proportion of the overall costs savings. In this case, the SIB structure is driven by the efficiency of the intervention and its ability to deliver additional value for money. The value of the proposed SIB to the public sector is determined by the avoided unit costs, or potential cost offset that the intervention model achieves. More precisely, by contrasting the costs of intervention to the current costs associated to the particular target population [28] that are further detailed in table 3²⁸. Potential cost offsets in a best case scenario (100% retention rate with the assumption of no public sector usage) of 4.401 € per homeless can be achieved. This amount is determined by subtracting the costs for the usage of public services of a chronically homeless person per year (10.722 € see table 3) by the costs of the *Housing First* intervention for one person for one year (6.320 €) [18]. Assuming that 300 people are stably housed over 24 months by *Housing First* and have such positive development that none of the above services is used, cost offsets of 2.256.425 € can be achieved²⁹.

Table 3 Vignette for potential costs offsets [15]

Vignette for chronically homeless man with drug and alcohol use and mental health problems			
Situation 1: Homeless	Usage	Unit costs of service in PT	Total costs per service in PT
Emergency Shelter	200 nights	18,60 €	3.720 €
Hospital, emergency facility	3 times	/	/
Hospital	4 nights	345 €	1.380 €
Psychiatric hospital	2 months	2.211 €	4.422 €
Prison (low-security)	1 month	1.200 €	1.200 €
Arrested and in custody	1 times	/	/
Total costs per year			10.722 €
Situation 2: Housing First*			
Accommodation in Housing First over a year			6.320,49 €
Potential cost offset (Situation 1 - Situation 2)			4.401,51 €

²⁸ It should be noted that these costs are based on experts' estimations and are not verified by public authorities, which is also for which reason that the results of the savings have not been used in the SIB modelling.

²⁹ A further breakdown of cost offsets in relation to possible scenarios is given in Appendix 9

7. Sensitivity analysis

The proposed business case is calculated on the basis of empirical success rates which may or may not materialize and have an influence on the financial implications, such as its profitability and eligibility. Testing the sensitivity of the model, different scenarios can be considered.

Firstly, the **influence of the premium payment to investors on the IRR** shall be analysed: The premium payment for investors, as explained above, is introduced to remunerate investors and not only base the payments on the arising costs. Indeed, a pure cost-covering payment would have a negative IRR and would not incentivise any investors to engage in the proposed SIB. A premium of 10% has been chosen due to investors bearing a high risk and a IRR of 2,7% being appropriate for a SIB worth 3.834.845 € (total costs). It can be concluded that the premium payment has a high influence on the investor return due to its sensitivity regarding the revenue which in turn increases the project surplus. In table 4 further premiums have been applied:

Table 4 Sensitivity analysis premium payment to investors

	Payment to investors					
	0%	5%	8%	10%	12%	15%
Investor IRR	-0,50%	1,20%	2,10%	2,70%	3,30%	4,30%
Project surplus	-43.900 €	145.647 €	259.375 €	335.194 €	411.013 €	524.741 €

In a second scenario, the **impact of the success rates on price per outcome metric unit for both outcome metrics** is to be tested. One can observe that the prices per outcome metric unit for both metrics decrease with increasing performance of the service provider. The reason behind is that the price is calculated based on the costs and divided by the success rate. Here it can be concluded that the price is not sensitive as it is always driven by the costs of intervention, but depending on the success rate, so the efficiency of the intervention, the price per outcome decreases.

Table 5 Sensitivity analysis price per outcome metric unit in accordance with success rates

	Cohort based				
	68%	73%	78%	83%	88%
price per outcome metric unit	185.76 €	173.03 €	161.95 €	152.19 €	143.55 €
change from one success rate to the higher one		13 €	11 €	10 €	9 €
	Individual based				
	66%	71%	76%	81%	86%
price per outcome metric unit	19.153 €	17.804 €	16.633 €	15.606 €	14.699 €
change from one success rate to the higher one		1.349 €	1.171 €	1.027 €	907 €

8. Final remarks

Limitations. Some limitations on the data and flexibility of the model need to be acknowledged.

Due to a lack of data collected on an international, national and local level, the actual profile of the target group is insufficiently defined. In order to be more precise and realistic in terms of outcome metrics and success rates by distinguishing between (1) mental ill, (2) substance abuse, (3) both, empirical data need to be in place. Even though a verified total number of homeless individuals in Portugal would not have affected the SIB modelling, the information would have been crucial to understand the necessity of measures to prevent an increase. In addition, the scope of the intervention over 6 municipalities has been defined without taking into account the caseload, meaning that the staff/client ratio requires a minimum number of 70 participants to be treated by 10 workers in each city. It is to be determined, if employees can hold more than one role and for instance be the coordinator and assistance simultaneously.

Next steps and final recommendations. At this juncture, AEIPS has already submitted the expression of interest for SIBs to *Portugal Inovação Social*, which will act as the public commissioner. In order for the application to be successful, legal due diligence and several last steps need to be complied. As AEIPS will be working as a principal to subcontractors in the defined regions, it is of particular importance that the *Housing First* fidelity as well as interests and costs structures are aligned. The same accounts for the identification of the target group which should be

more standardized to ensure that all subcontractors work with individuals of the same degree of “difficulty” to avoid cherry picking. This is also in line with the SIB methodology which requires a more accurate pre-assessment of the individual’s mental health and degree of substance abuse. It is therefore recommended to apply the *Multnomah Community Ability Scale* (MCAS)³⁰ to assess mental health and the *Global Assessment of Individual Needs - Substance Problems Scale* (GAIN - SPS) to determine the level of substance use disorders.

Conclusion. “The Housing First approach involves a change in the balance of power between service providers and service users compared with more institutional provision.” [20]. It is the more human oriented way of solving the problem that has demonstrated great success rates all over the world. In times of scarce government budgets the awareness for preventive measures needs to be increased. Especially in the case of homelessness, given the high level of support needs and unstable lifestyles of the target group, the cohort places a significant burden on public sector resources, primarily around high usage of acute health services. Taxpayers’ money is spent for emergency measures that have no long-term impact on the future potential to increase the tax revenues. Furthermore, and especially applicable for Portugal, a more rigorous data collection and evaluation on the number and profile of individuals as well as the costs associated would be fostered, as they present the basic requirement for the SIB structuring [29]³¹.

Along with the positive results from other *Housing First* projects, this feasibility study proves the viability of implementing additional *Housing First* interventions in the north and center of Portugal. All parties involved could profit from the proposed model not only in financial terms but also to promote social innovation in Portugal. Social service providers will be more incentivized

³⁰ MCAS is a standardized method to measure the level of functioning of chronically mentally ill individuals. It comprises 17 items, grouped into four categories: interference with functioning, adjustment to living, social competence and behavior problems. The higher the score from a range of 17 to 85, the better the functioning.

³¹ Further advantages of SIB in Appendix 10.

to implement new intervention models, investors have the opportunity to contribute socially, governments shift away the risk, let alone the benefits for the target population.

This Master Thesis is now handed over to AEIPS and presents the basis for the ongoing application process to *Portugal Inovação Social* and further negotiations with social investors.

References

- [1] Homeless world cup organization (2016). Global homelessness statistics. <https://www.homelessworldcup.org/homelessness-statistics/>. (Accessed 05.01.2016).
- [2] Pathways National (2015). Housing First Model. <https://pathwaystohousing.org/housing-first-model>. (Accessed 19.10.2015).
- [3] United Nations, 2005. Report of the Special Rapporteur on adequate housing as a component of the right to an adequate standard living. P. 2.
- [4] Baptista, I. (2013). The First Portuguese Homelessness Strategy: Progress and Obstacles. Access to Housing and Homelessness. P. 91.
- [5] Eurostat (2015). At-risk-of-poverty rate anchored at a fixed moment in time (2008) by age and sex (source: SILC). <http://appsso.eurostat.ec.europa.eu/nui/show.do>. (Accessed 19.10.2015).
- [6] Portugal News Online (2011). Number of homeless people up 20 to 30% since 2008. <http://www.theportugalnews.com/news/view/1127-6>. (Accessed 05.01.2016).
- [7] Welcomeurope (2014). Structural Funds In Portugal for 2014-2020. <http://www.welcomeurope.com/fact-of-the-day/structural-funds-portugal-2014-2020-210+110.html#afficheTexte>. (Accessed 21.12.2015).
- [8] European Commission (2013a). Confronting Homelessness in the European Union. Understanding Homelessness. P. 4, 5 file:///C:/Users/Malou-Anne/Downloads/SWD_Confronting-homelessness_en.pdf. (Accessed 20.09.2015).
- [9] European Commission. Homelessness. <http://ec.europa.eu/social/main.jsp?catId=1061>. (Accessed 28.09.2015).
- [10] Avramov, D. (2002). People, Demography and Social Exclusion, Homeless people and services to assist them. P. 262.
- [11] Busch-Geersema et. al (2010a). Homelessness and Homeless Policies in Europe: Lessons from Research. 1. Understanding Homelessness.
- [12] National Coalition for the Homeless (2009). Mental Illness and Homelessness.
- [13] National Coalition for the Homeless (2009a.). Substance Abuse and Homelessness.
- [14] Nieto, G. et al. (2008). Homeless Mentally Ill Persons: A bibliography review. A worldwide vision. http://www.psychosocial.com/IJPR_12/Homeless_Mentally_Ill_Nieto.html. (Accessed 06.01.2016).
- [15] AEIPS (2015). First Homes. http://www.aeips.pt/?page_id=94. (Accessed on 29 Sep. 2015).
- [15] Pleave, N. et al. (2013). The Costs of Homelessness in Europe. Pp. 11-12.

- [16] FEANTSA Country Fiche. (2013). Portugal. Key Statistics. P.1.
- [17] AEIPS (2015a). FORMULÁRIO PARA MANIFESTAÇÃO DE INTERESSE.
- [18] Pleace, N. et al. (2013a). The Costs of Homelessness in Europe. Pp. 34, 39.
- [19] Tsemberis, S., Gulcur, L. and Nakae, M., (2004a) Housing first, consumer choice,
- [20] Busch-Geertema, V. (2014). Housing First Europe – Results of a European Social Experimentation Project, Housing Retention Rates. Pp. 19-23.
- [21] SelectedWorks, 2014. SelectedWorks of Sam Tsemberis, http://works.bepress.com/sam_tsemberis/, (Accessed 13.11.2015).
- [22] AEIPS (2015b). CP Participantes 2009-2014.
- [23] Ornelas, J., (2014). Housing First – Changing social policies towards ending homelessness.
- [24] Inova Portugal. 2015. Press Release: Academia de Código Júnior. <http://investimentosocial.pt/press-release-academia-de-codigo-junior/>. (Accessed: 24.10.2015).
- [25] McKinsey&Company (2012). An Introduction to Social Impact Bonds, <http://mckinseyonsociety.com/social-impact-bonds/>.(Accessed 19.11.2014).
- [26] Tsemberis, S., et al. (2004). Housing First, Consumer Choice, and Harm Reduction for Homeless Individuals With a Dual Diagnosis. <http://www.ncbi.nlm.nih.gov/pmc/articles/PMC1448313/>. (Accessed 06.01.2016).
- [27] Numbeo (2015). Cost of living. http://www.numbeo.com/cost-of-living/city_result.jsp?country=Portugal&city=Lisbon. (Accessed 05.12.2015).
- [28] Cabinet Office (2011). London Rough Sleeping Social Impact Bond. https://data.gov.uk/sib_knowledge_box/london-rough-sleeping-social-impact-bond. (Accessed 16.12.2015).
- [29] Social Finance, Inc (2012). A new tool for scaling impact.
- [30] Social Finance Inc. (2015). What is pay for success financing?.<http://www.socialfinanceus.org/social-impact-financing/social-impact-bonds/what-social-impact-bond>. (Accessed 16.12.2015).
- [31] Miguel and Abughannam (2014). Housing First Social Impact Bond Feasibility Study. Housing Stability. P. 10.
- [32] Mental Health Commission of Canada (2014). Canada Housing First Toolkit. Module 4 – Evaluation of Housing First. P. 153. (Accessed 13.11.2015).
- [33] Neuhoff, A., Searle, R. (2008). Stanford Social Innovation Review. More Bang for the Buck. http://ssir.org/articles/entry/more_bang_for_the_buck/. (Accessed 17.11.2015).