

A Work Project, presented as part of the requirements for the Award of a Master Degree
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SOCIAL IMPACT BOND FEASIBILITY STUDY:
ART AS A TOOL AGAINST SOCIAL EXCLUSION
PROJECTO DARTE

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Abstract

Inequality in education contributes to social exclusion. Students with social, emotional, and behavioral issues tend to face segregation in school and poor educational achievements, which undermine their ability to fulfill their potential. Several sources show that poor performance in school is one of the causes of social exclusion. DARTE successfully uses art as therapy to improve students' social and learning skills and emotional wellbeing. This feasibility study gives recommendations for the design and implementation of a DARTE SIB in Porto, showing the project as a suitable candidate with the potential to create social and economic benefits.

Keywords: SIB, social exclusion, education, DARTE

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1. Methodology

This project is a feasibility study of a social impact bond, developed under the Social Investment Lab¹ SIB research program. The methodology of the program has three core parts: understand the social challenge, identify a strong intervention model that tackles this challenge, and determine whether a SIB is the appropriate tool to fund the intervention and if so, design its mechanism. The work was done based on both qualitative and quantitative data and supervised by the director of the Lab, António Miguel, as seen on Figure 1. The core quantitative data used for the business case was based on a dynamic Excel model developed during the program.

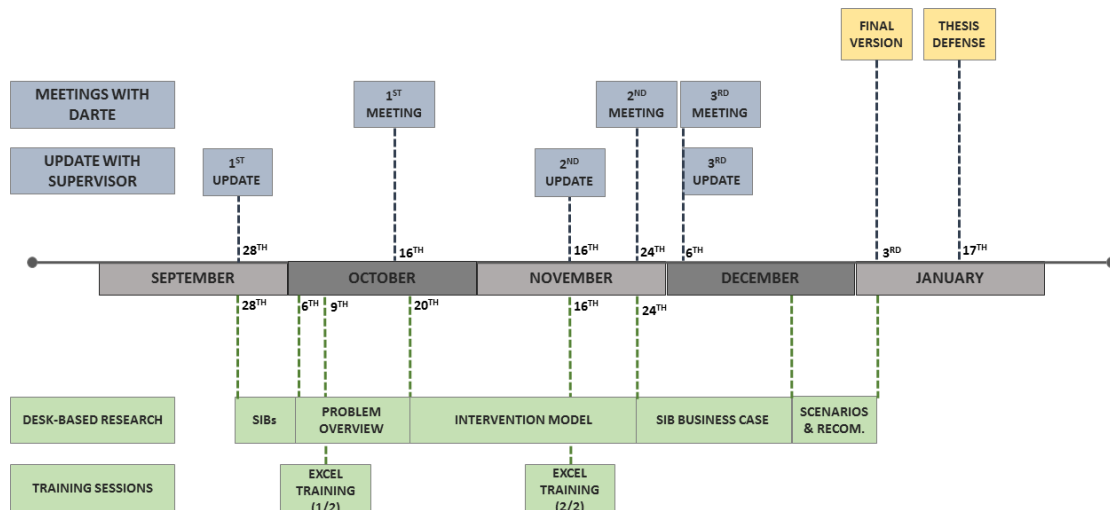


Figure 1: timeline of the work project.

2. Introduction on social finance

Social investment encompasses investments that seek both social and financial returns. The focus goes beyond risk and return and targets social objectives along with financial sustainability (Grupo de Trabalho Português para o Investimento Social 2015). One of the financing mechanisms used in social investment are Social Impact Bonds (SIBs) - financial contracts between social organizations, private investors, and

¹ The Social Investment Lab is a social finance intermediary operating in Portugal. The Social Impact Bond Research Program is a 6-month social investment training program.

governments where investors are repaid by the public sector if certain predefined results are achieved by the organizations they funded upfront. SIBs allow private investment to fund interventions that deliver better social outcomes than current solutions implemented by the state, mostly through an improvement in cost-effectiveness and outcome efficacy. The improved social outcomes usually result in savings for the government that agrees to pay a share of these savings to the investors. If there are no improvements, the government does not pay back investors (Disley, et al. 2011). Payments by the government can also be based solely on the outcomes, independent of resulting in savings by the state – in these cases, value for money is achieved through the risk transfer from the public sector to the private investors. The service providers are usually non-profits or social enterprises that have technical skills and tested intervention models with promising evidence, but lack the capital to deliver substantial results due to constant underfunding. Within a SIB contract, they obtain capital and more flexibility to provide the services and deliver the results. Investors finance the activities of the organization by embracing part of the risk while trusting that the outcomes will be reached. Besides the financial returns, being responsible for enabling outcomes that promote social good is another incentive to invest in these projects (Cabinet Office and Department for Digital, Culture, Media & Sport 2012)². A feasibility study is the first step to develop a SIB: to understand the dimension of the problem, identify a strong intervention model to tackle it, and define outcome metrics, a timeline, and the amount of capital needed for the intervention.

Worldwide, there are 8 SIBs in the field of Education and Early Years that represent \$36.3 million of capital raised and 24 613 young people reached. The ‘Junior Code Academy’ Social Impact Bond, in Lisbon, is testing the impact of teaching computer

² Benford, Bernbaum, & Drombrowski mention that social investments are “(...) complementary to existing financial resources and should not trigger a debate over the distribution of public spending or indeed cuts. Rather, SII should broaden and strengthen the social sector’s financing system (...) In particular, the use of SII [SIB] should not lead to the privatization or commercialization of state-guaranteed public services” (Benford, Birnbaum e Dombrowski 2014).

skills to primary school children to improve cognitive skills and school performance and will inform public policy on the matter. In Norrköping and Seoul, two SIBs provide support to children placed in care homes, considered to be at higher risk of poor academic results and exclusion than their peers. Finally, in Saskatchewan there is a SIB to support young indigenous students at high risk of poor academic achievement to engage in education and remain in school – historically students from these communities have lower graduation rates than non-indigenous students (Impact Bong Global Database 2017).

3. Understanding the problem: social exclusion of children in Portugal

Europe 2020 defined lifting 20 million people out of the risk of poverty or social exclusion (AROPE) by 2020 as one of the headline targets. In 2016, 23.4 % of the population in the European Union (EU) was at risk. Portugal ranked higher than average, with 25.1% of the population at risk. Children presented a higher risk than the rest of the population, with 26.5 % in the EU and 29.6% in Portugal (EUROSTAT 2017) (INE 2014). These stats are illustrated on Figure 2.

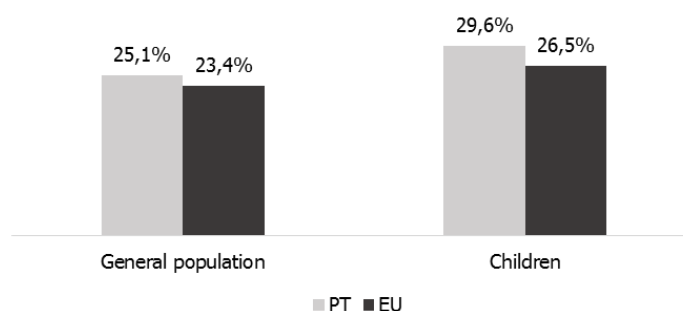


Figure 2: percentage of the population AROPE. Source: EUROSTAT

Social exclusion can be defined as the “inability to participate effectively in economic, social, and cultural life, [...] [the] alienation and distance from mainstream society” (Duffy 1995). It exceeds the concept of poverty, and can be explained by both monetary and non-monetary elements. It is also the lack of different powers, particularly rights and duties associated with citizenship like decision-making, influence, and participation

(International Labour Organization 2003). UNESCO (2012) illustrates these situations as the inability to vote, discrimination gaining credit or assets, and more challenges regarding employment or healthcare, for example (UNESCO 2012). The European Commission defines the people at risk of social exclusion as those who are at risk of poverty, or severely materially deprived, or living in households with very low work intensity.

i. Causes

The International Labor Bureau identifies three major factors that lead to social exclusion: *macro* or global, meaning economic and political factors; *meso* or local, that derive from macro but also include cultural factors; and *micro* or personal, including family, health, age, personal choices, among others (International Labour Organization 2003).

For children in particular, their risk of social exclusion can be related to inequality. Children born in economically and socially disadvantaged environments with parents with lower levels of education and employment, are more likely to live in families with less disposable income, inadequate housing, and limited access to healthcare and early childhood education and care. This illustrates an intergenerational transmission aspect of poverty and social exclusion. The intervention of the government through monetary and service support plays a decisive role in this phenomenon, weakening the effect of economic disadvantage and improving the chances of lifting the recipients from being socially excluded (EUROSTAT 2017) (Save the Children 2014). Another aspect linked to social exclusion that goes beyond material needs is inequality in education. This can be linked to the school and learning environment, if teachers and staff lack the skills or the material resources to provide the students with proper education. But Klaser (2001) also highlights a tendency in some education systems for segregation of children with

learning difficulties, behavioral, and/or emotional problems as a vehicle for social exclusion. This differentiation is done either by taking these kids out of the regular system, by aggregating them in classes, or by simply not catering to their needs. Data has shown that this phenomenon can be associated with poor educational achievements, undermining the children's ability to fulfill their potential (Klasen 2001). Several sources show that poor performance in school is one of the major factors that creates and feeds the phenomenon of social exclusion (Sparkes 1999).

In Portugal, 30% of the students repeat at least one grade, a higher number than the average of 18% for the EU. Portugal ranks 8th on the list of the European countries with the highest number of students in retention. 13% of the students revealed learning difficulties in reading, math, and sciences on the Programme for International Student Assessment. According to Ministério da Educação, 1 in 5 students repeats the grade or drops out (Lusa 2016). It is important to refer that retention alone does not illustrate the issues that can lead to the social exclusion of children. Children can have difficulties that do not result in retention, but still have a negative aspect on their performance and emotional wellbeing. In fact, success in tests and avoiding retention do not reflect the whole of students' experience in school – their attitudes and behavior are also relevant.

Klasen (2001) claims that schools should “counterbalance the effects of parental socio-economic status, ethnic and linguistic barriers, and difficult family backgrounds”. Environmental inequality feeds inequality in education, which in the long run will maintain and produce unequal environments. Thus, addressing one of these issues will help break this intricate and symbiotic relationship.

ii. Consequences

Children that grow up in risk of social exclusion are statistically less likely to do well in school and reach their full potential in adulthood (Andor 2013). In fact, evidence

shows that there are significant differences in cognitive outcomes between socially excluded children and children growing up in more favorable conditions, particularly regarding their psycho-motor development, socio-economic growth, and cognitive processes (SPC 2013). As a consequence, these students usually have poor performances in school and may need to repeat grades. In Portugal, retention affects around 150 thousand students, costing the state around 200 million euros (4000€/student) as well as the cost of delaying the entrance of the student to the labor market (CNE 2015).

Besides the economic costs, retention and poor performance in school have negative psychologic effects on the students, particularly reduced motivation and self-esteem, worse relationships with peers, and higher risk of dropping out (Jimerson 2001). Even if the students do not repeat grades, low school attainment can lead to excluding these children from the benefits and opportunities that come with education. It can lead to inability to exercise their rights as citizens, suffering higher unemployment rates and long term unemployment, and a higher risk of exclusion from the labor force (Klasen 2001). Children in risk of social exclusion are also more likely to become juvenile delinquents engaging in drug abuse and crime. In the long term, this can lead to adult crime, antisocial behavior, poor employee relations, unemployment, interpersonal problems, and poor health (Andor 2013). Also, considering that social exclusion is often intergenerational, the social exclusion of children will lead to future socially excluded citizens, amplifying the effect of the phenomenon.

The consequences of child social exclusion are vast and widespread, so it is difficult to estimate the economic costs of this phenomenon. However, Hirsch (2008), for example, estimated that in the UK around £13 billion could be saved from tackling child poverty, including the costs of dealing with some of the consequences mentioned before:

poor health, unemployment, tax revenues lost, low educational attainment, crime and anti-social behavior (Hirsch 2008).

On a large scale, social exclusion tampers with the stability and prosperity of society as a whole. It has a negative impact in social cohesion, threatening the “stability and legitimacy of the democratic order and the governance of societies, as all democratic societies rely on the participation and support of its citizens for the effective functioning of government” (Klasen 2001). By failing students with learning difficulties, emotional and behavioral problems, the educational system feeds the cycle of social exclusion.

4. Identifying a strong intervention model: DARTE

One of the approaches to tackle social exclusion is through education, particularly by targeting students with learning, behavioral, and/or emotional difficulties. Helping these students enhance their performance and overall well-being in school has an effect in social equality, as many of these students come from socio-economically disadvantaged background and/or risk becoming socially excluded adults if their issues remain unaddressed (OECD 2016).

In Portugal, there are two programs in place that aim to improve the academic results of low-performing students. In particular, Programa Mais Sucesso Escolar establishes a dialogue with the family of the students to develop an engagement with their performance in school. However, this project was reported as having underperformed considering the resources used³. The Fénix project aims to reduce the number of retentions by improving the students’ scores in Portuguese and Math and has been successful in doing so (OECD 2016). Still, these programs deal exclusively with learning difficulties and disregard

³ “The program Mais Sucesso Escolar has to deliver accountability because it used more resources but did not deliver better results” (OECD 2016).

behavioral and emotional issues, which have a negative effect in students' lives and might also feed their learning difficulties.

Founded in 2013, DARTE is a non-profit educative project that works with children aged 5 to 16 dealing with learning, emotional, and/or behavioral difficulties. Usually, it is only when the problems worsen that action is taken and children are referred to services that deal with high risk situations. Instead, and to avoid the escalation of the issues, DARTE offers the possibility of early intervention, using art as a therapeutic vehicle to improve their social and learning skills as well as self-esteem, working with children in small groups in a welcoming, calm, and creative environment. Their method, inspired by the British initiative Art Rooms, is one of the few art therapy projects in Portugal (DARTE 2017). It has worked with more than 300 children since 2013, in different schools and institutions in Lisbon. Currently, it is working with 64 children (September-December 2017)

Students are referred to DARTE by teachers or supervisors that observe their interaction with peers, adults, and authority figures both inside and outside the classroom. Their performance at school is also taken into account. Using art as a vehicle for subtle therapeutic work, practitioners work with the children individually and as a group, helping them express themselves and develop self-confidence. The project consists two hour weekly sessions held during the school schedule that last a trimester. Two or three trained practitioners work with small groups of six students or less, so that they can carefully manage the complex needs of every child. The practitioners work with the children on two individual and one group art projects. Over the course of the intervention, each child's progress is tracked and shared with the school establishing an ongoing dialogue. This dialogue helps the organization understand the needs of each individual

child and also makes sure the positive impact endures when the children return to classroom (The Art Room Impact Report 2017) (DARTE 2017).

The main goal of the project is to give the children tools to avoid social exclusion. Particularly, by catering to their particular needs as they exhibit learning difficulties, emotional, and/or behavioral difficulties. To do so, the project creates an atmosphere where positive language, social literacy, and emotional support are encouraged. The goal is to give each child a sense of self-worth and capability, and provide a structured experience that helps students feel safe, accepted, and able to deal with their own choices and decisions. Ultimately, the project aims to develop the children's learning, social, and emotional skills so that they are more capable to deal with their issues with mainstream education, help them better integrate, give them tools to deal with difficulties, and contribute for them to reach their potential (DARTE 2017) (The Art Room Impact Report 2017).

The effects of the intervention are assessed with the Strengths and Difficulties Questionnaire (SDQ), a behavioral screening questionnaire developed for children aged 3-16 years used by researchers, clinicians, and educationalists. It is a well-regarded tool to measure the outcomes of interventions (J, P e A 2003) (Ortuño-Sierra, Aritio-Solana e Fonseca-Pedrero 2017). The assessment is done at the beginning of the intervention and at the end. The SDQ questionnaire provides information on the child's emotional well-being and conduct problems, i.e., level of difficulty in terms of their behavior, tendency towards hyperactivity/inattention, peer relationships problems, and prosocial behavior (Goodman 1997). The second questionnaire includes two follow-up questions, particularly "Has the intervention reduced problems?" and "Has the intervention helped in other ways, e.g. making the problems more bearable?" (SDQ 2017). SDQ is used to evaluate whether an intervention resulted in an improvement of their social and emotional

skills, which reflect their behavior, and of their learning skills. These questionnaires are completed by the students, their parents, and their teachers, in order to cross-check information and evaluate the impact of the intervention. The process is illustrated on Figure 3.

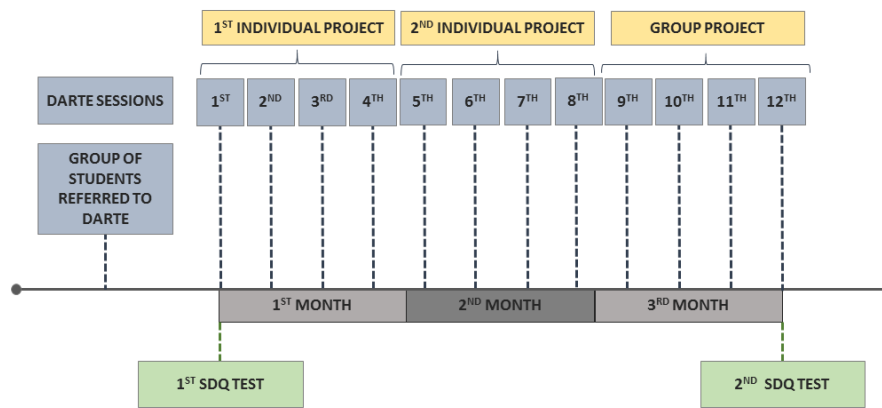


Figure 3: DARTE intervention model.

The method has been proven to have a positive impact on the children’s learning, emotional, and social skills. Cortina & Fazel (2014) showed that one particular Art Room intervention reduced the number of children with “clinical caseness”, i.e., the criteria to refer a child to mental health services, by 61.42%. It also contributed to a reduction in their emotional and behavioral problems, according to their Strengths and Difficulties Questionnaire (SDQ) scores. In addition, it had a positive impact on the improvement of their mood and feelings, according to their short Mood and Feelings Questionnaire (sMFQ), increasing in 87.5% for the students who showed significant issues on this aspect (Cortina e Fazel 2015). Messias (2015) found that the overall social skills of 40 children that participated in a DARTE intervention improved, according to their SDQ scores, particularly in the hyperactivity subscale (Messias 2015). Canha (2016) found that a group 68 children that participated in DARTE had an improvement of their social skills and their behavioral issues as well as in their hyperactivity, according to feedback given by their parents (Canha 2016).

i) Suitability for a SIB

DARTE is an innovative project dealing with children at risk of social exclusion, particularly by focusing on an aspect ignored by other programs- their emotional and social difficulties – but also focusing on their learning skills, essential to improve their school performance. DARTE is being considered for a SIB because it needs capital to expand its activities and increase the number of students that can benefit from it. In addition, the project can achieve outcomes on a reasonable time horizon – 3 months - and there is evidence of success. There is a lack of response to the social and emotional difficulties exhibited by students that can put them at risk of social exclusion and have negative consequences on their adult life. The economic benefit of an intervention that tackles these problems is hard to pin down considering how widespread the consequences of leaving the children’s issues unaddressed are. Ultimately, the project has the potential to shape national decisions about social exclusion of children and teens through the evidence of the effectiveness of the approach with policy makers (The Art Room Impact Report 2017). Ideally, if proven to work, it should be internalized as public provision across all schools.

5. Developing a SIB business case

i) Scope

The target population of the project are **students aged 5 to 16 that show learning, emotional, and/or behavioral difficulties** and are therefore at risk of social exclusion. The source of referral of students are teachers and/or tutors. For the purpose of this SIB, the metropolitan area of **Porto** will be targeted considering that Estrutura de Missão Portugal Inovação Social (EMPIS) is not accepting applications for the areas of Lisbon and Algarve, and that several schools in Porto have previously shown interest in working with DARTE.

The project will work with **9 cohorts**, each corresponding to **48 beneficiaries** and a duration of **3 months**. These 48 beneficiaries are students from different schools, divided in 8 groups of 6 per school. Each group will have a weekly two hour session between Monday and Thursday, in the morning or afternoon during school schedule. The project will apply for a 42 month contract, because EMPIS is only accepting applications that last until 2021. The details of the project are shown on Table 1.

Table 1: SIB length and cohorts.

INTERVENTION MODEL		NR BENEFICIARIES
Intervention length	36 months	1 cohort = 1 trimester
Total project length	42 months	nr groups/trimester = 8
Nr students/cohort	48	nr students/group = 6
Total nr cohorts	9	nr students/cohort = 48
Cohort length	3 months	
Total nr students	432	
Project start date	01 jul 18	
COHORT NR	START DATE	END DATE
1	01 oct 18	01 jan 19
2	01 jan 19	01 apr 19
3	01 apr 19	01 jul 19
4	01 oct 19	01 jan 20
5	01 jan 20	01 apr 20
6	01 apr 20	01 jul 20
7	01 oct 20	01 jan 21
8	01 jan 21	01 apr 21
9	01 oct 21	01 jan 22

ii) Costs

The total cost of the project is estimated to be 321 925 €, considering the following cost categories on Table 2:

Table 2: budget for the SIB.

STAFF COSTS	
Coordinator	2 000 €
Assistant (1)	1 500 €
Assistant (2)	1 500 €
Marketing & Communication (part-time)	500 €
Supervision (occasional)	100 €
SUB-TOTAL – STAFF COSTS (PER MONTH)	5 600 €

DIRECT COSTS	
Advertising	100 €
Purchase of goods and equipment (art material, supermarket)	200 €
Travel expenses (gas, parking)	150 €
Rent & asset depreciation	300 €
Other costs	50 €
SUB-TOTAL – DIRECT COSTS (PER MONTH)	750 €

OVERHEAD COSTS	
Running costs (water, electricity, and cellphone bills)	75 €
Maintenance costs (equipment and facilities)	25 €
Other overhead costs (includes consumable goods)	25 €
SUB-TOTAL – OVERHEAD COSTS (PER MONTH)	125 €

TOTAL COSTS (PER MONTH)	6 525 €
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Some categories have different costs depending on the month. The categories on *Staff Costs* correspond to salaries and are doubled in July and December for holiday subsidies. *Advertising* is doubled in September, December and March to advertise the project before the next quarter; and *Purchase of goods and equipment (art material, supermarket)* will be higher on the first two months of the project (€2500) to acquire computers and office material.

iii) Outcome metrics and payment mechanism

The intervention will have two outcome metrics: the improvement of the SDQ scores of the students and their grades, which should be sufficient to pass. The metric is to decrease the scores of 70% of the students by an average of 1 point on the test taken at the end of the intervention, in relation to the scores of the test taken on the beginning of the intervention. Decreasing the score of each student by 1 point is considered an improvement of their social, emotional, and learning skills⁴. This allows to assess the improvement of each student in relation to its own situation, and not set the same bar for every student. Each student's situation and needs are individual and therefore not every

⁴ An improvement in the SDQ score means a decrease of about 1 point in the total difficulties score. For further information see Appendix I.

student can be expected to reach the same results at the end of the intervention. By doing so, the outcome metrics also avoid cherry picking because it is a cohort-based metric, not individual, that will trigger the outcome payment to investors. It is not expected that DARTE will improve every student's scores, as some of them might exhibit difficulties that require more specialized intervention - possibly medical. Besides, the grades of the students will be used to further measure the improvement of their learning skills. The target is to help 50% of the students pass the grade, and the grades considered will be those obtained after 3 months. This will allow to evaluate the duration of the effects of the intervention through time and verify the correlation between the improvement of the SDQ scores and the improvement of the grades. The outcome metrics can be seen on Table 3.

Table 3: outcome metrics for the SIB.

METRIC	TIME TO OUTCOME	OUTCOME	NR SUCCESS CASES
Improvement of SDQ scores	0 months	70%	302
Pass the grade	3 months	50%	216

The payments will be based on the achievement of these outcomes. For each cohort, EMPIS will repay the investors 70% of the costs if the SQD scores are improved and the remaining 30% if the grades obtained by the students are sufficient to pass.

iv) Investment structure

The total upfront investment required for the intervention is 95 195 €, outflowing on the first month (July 2018). Payments to the investors will be done by EMPIS at the end of each cohort and after 3 months, according to the two outcomes defined and considering a delay of 3 months between the achievement of the results and the payments. The flow of costs and revenues can be seen on Figure 4 and cumulative costs and cumulative revenues on Figure 5.

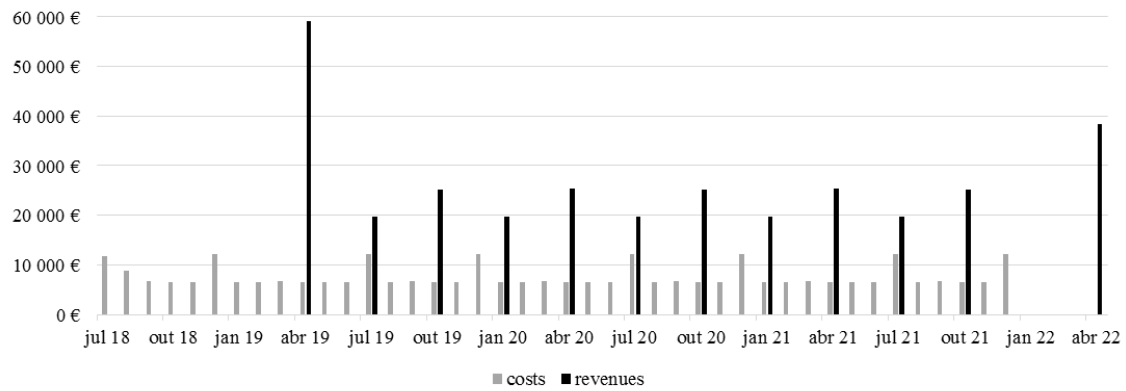


Figure 4: SIB flow of costs and revenues.

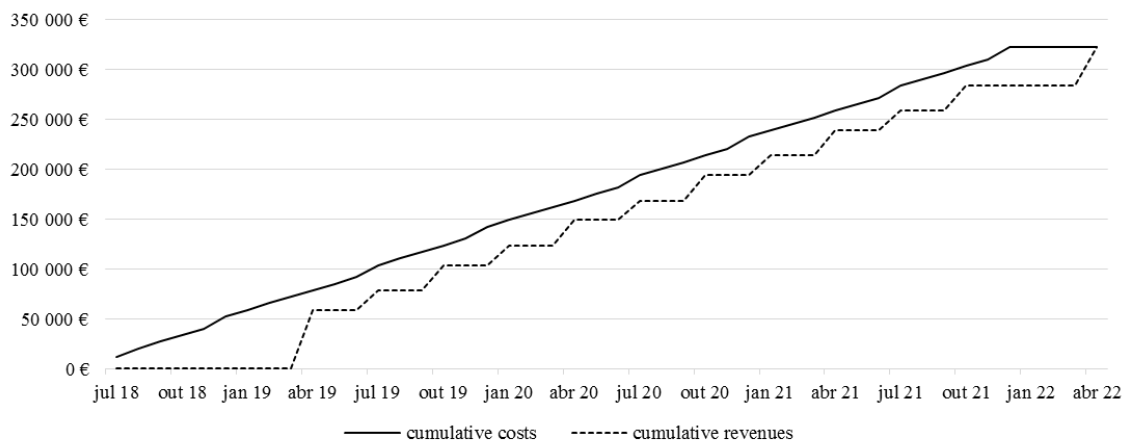


Figure 5: SIB flow of cumulative costs and revenues.

The payments done by EMPIS will be recycled into the project to keep it running, until April 2021 when all costs will be covered. From then on, investors will be able to keep the payments until the last (April 2022), as seen on Figure 6.

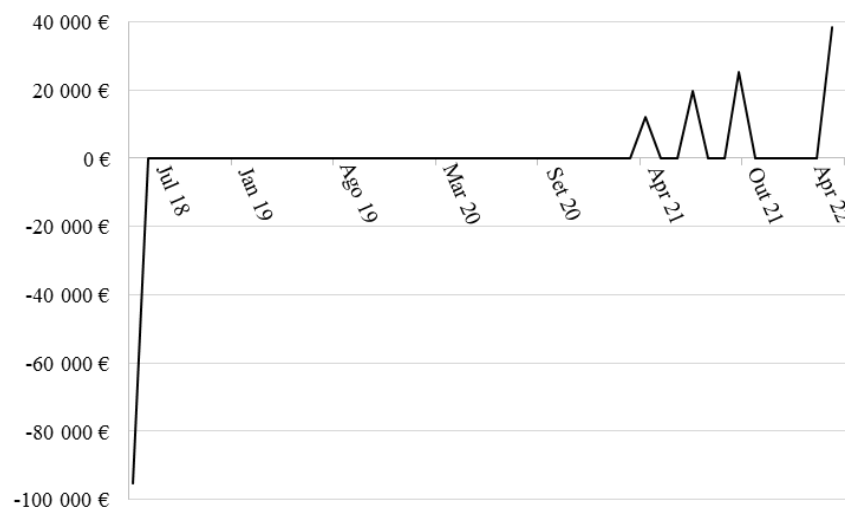


Figure 6: SIB investors' cash flow.

v) Scenarios

The business case described above makes the assumption that the total number of students is 432 (48 per cohort) and that the time to achieve the outcomes is 0 and 3 months, for the SDQ and the grades, respectively. However, these factors are not stable and might be different than what was accounted for. If so, the costs and the investment need of the project might change. In order to understand and quantify this changes, a sensitivity analysis was done changing the number of beneficiaries or the times to outcomes, *ceteris paribus*.

Number of students: changing the number of students has some impact on the cost of the project, but it is not significant. The variable cost per student is around 4 € per month⁵. So, if the number of students is lower, say 32 per cohort⁶ and 288 total, the total cost of the project is 319 045 € and the investment need is 94 485 €. If the number of students is higher, say 64 per cohort⁷ and 576 in total, the total cost of the project is 324 165 € and the investment need is 95 747 €, as seen on Table 4.

Table 4: sensitivity analysis I - scenarios for different numbers of students.

TOTAL NR STUDENTS	TOTAL COST	INVESTMENT NEED
288 (32/cohort)	319 365 €	94 564 €
432 (48/cohort)	321 925 €	95 195 €
576 (64/cohort)	324 485 €	95 826 €

Time to outcomes: changing the times to outcomes has an effect on the investment need. The time to outcome for the improvement of the SDQ scores is 0 months because the tests are done at the end of the intervention. If the tests cannot be done at that time but only 2 months after, the total cost of the project will remain the same but the investment need will be higher (108 245 €). If the time to outcome for the SDQ is 4 months, the investment need is 114 770 €. From then on, longer times to this outcome will not increase

⁵ Calculated by dividing the expenses with art supplies and supermarket by the number of students (200/48 = 4 approx.).

⁶ 4/group, 8 groups/cohort.

⁷ 8/group, 8 groups/cohort.

the investment need is defined by the achievement of the first outcome, when the first repayment by EMPIS is done. From then on, no more investment is required because the repayments are recycled into the project. The time to outcome for the grades is 3 months, so the investment need for times to the SDQ outcome equal or higher than 4 months will result in the same investment need. Similarly, changing the time to outcome to pass the grade from the expected 3 months to 1 or 5 months does not affect the investment need because the time to outcome for the SDQ will remain 0 months. The different scenarios can be seen on Table 5.

Table 5: sensitivity analysis II – scenarios for different times to outcomes.

OUTCOME	TIME TO OUTCOME	TOTAL COST	INVESTMENT NEED
Improvement of the SDQ score	0 months	321 925 €	95 195 €
	2 months	321 925 €	108 245 €
	4 months	321 925 €	114 770 €
Pass the grade	1 month	321 925 €	95 195 €
	3 months	321 925 €	95 195 €
	5 months	321 925 €	95 195 €

6. Limitations and recommendations

First, it is necessary to state the importance of an ecosystem of other social interventions for the success of this project. DARTE is set for children at risk of social exclusion and aims to reduce or eliminate this risk. However, the project does not work by itself nor can exist in a vacuum. In fact, its effectiveness is dependent of other measures against social exclusion that tackle the problem on other fronts. For example, cash transfers and/or provision of goods and services to socially excluded families or at risk of social exclusion; and the equality in access to services and democratic tools to all citizens. As discussed on point 3, inequality in education is an important factor of the problem but it is not the only one. Fighting inequality in education is relevant if material and social inequality are being tackled too. The effectiveness of the intervention is sustained by the material and social wellbeing of the children and their families.

Second, the project states as one of its objectives to help children realize their full potential. But behavioral, emotional, and social issues are the only barrier to do so. There are other restraints to “reach their full potential”. Opportunity is an essential factor for this and opportunities and privilege are mostly inherited, as is wealth. In Portugal, an individual’s income is explained by their parents’ education by 5.4%. In UE this percentage is 1.9%. This is to say that the higher your parents’ education level, the higher your future income will be. This is also influenced by the parents’ occupation: in Portugal, 9.4% of an individual’s income is explained by their parents’ occupation while on UE the percentage is 2.1% (d’Uva e Fernandes 2017). And this generational aspect of wealth, privilege, and opportunity is present even in countries with high rates of social mobility. For example, a study found that in Sweden, where social mobility has one of the highest rates in the world, the top of the income spectrum is dominated by people born to parents on the same spectrum (Surowiecki 2014). So it could be argued that even if some children have a high potential, some of them might not be able to reach it for lack of access to opportunities.

Third, the project aims to improve the students’ SDQ scores and avoid retention. However, it is not necessary that all students referred to DARTE are at risk of retention. Some students might exhibit social, behavioral, and learning skills, and be in need of participating in DARTE but still achieve grades sufficient to pass. So, the link between avoiding retention and participating in DARTE might not be straightforward, and some effects of the project might not be taken into account. It could be that some students would still pass the grade if they did not participate in DARTE but improve their grades after being in the project, and this is not being measured. However, avoiding retention was selected as an outcome because it can be used for children across different grades,

and can be linked to an economic benefit to the state serving as a complement to the other social benefits offered by DARTE, harder to quantify in terms of savings.

Fourth, the project will take into account the grades obtained 3 months after the end of the intervention, and these should be sufficient to pass the grade. However, this does not always correspond to the end of the school year. In the case of the students that participated in the second trimester, the grades measured for the project correspond to the final grades. But for first and third trimester students, the grades measured will not be the ones that determine retention. It was necessary to define the same time to outcome for all cohorts, but it should be kept in mind that retention was not necessarily avoided for some students and their grades should be checked at the end of the year to evaluate how many of them actually passed the grade.

Finally, the sensitivity analysis showed that changes in the number of participants do not have a significant impact on the cost nor on the investment need. However, a lower number of students undermines the ability of the project to achieve the predetermined outcomes. This means that the project should not run if the number of participants ends up being significantly lower, or that it should be possible to renegotiate the outcomes agreed in the beginning. Changes in the times to outcomes do not affect the cost of the project but affect the investment need, as this factor depends on the achievement of the first outcome. A delay of 2 months causes a raise in 13 050 € in the investment need, and a delay of 4 months causes a raise in 19 645 €, much more significant than the change observed with the number of students. This signals that the coordinator should have special attention on completing the SDQ tests on time.

7. Conclusions

This work has shown DARTE as a suitable candidate for a SIB. It is an innovative project tackling social exclusion with the potential to bring benefits for stakeholders.

Namely, students can improve their behavior, grades, social skills, and emotional wellbeing; schools benefit from the improvement of the students skills; and the state will be able to invest in a project with social and economic benefits while transferring the risk to investors. The SIB process is shown on Figure 7.

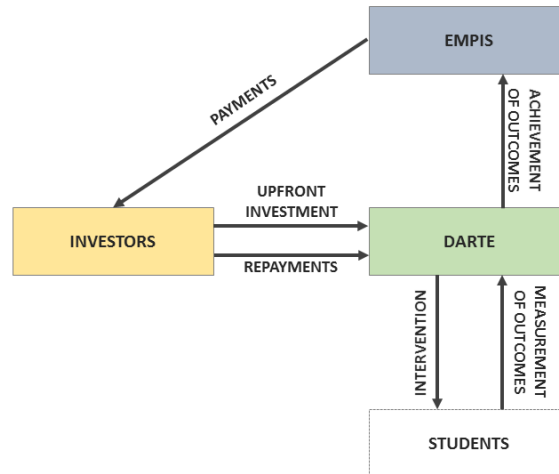


Figure 7: SIB process.

Finally, despite the limits of social mobility and opportunity stated before, education does allow empowerment and is one of the most effective tools against poverty that can achieve and sustain economic and social wellbeing. So, the hope is that DARTE will be able to successfully apply and obtain a SIB, achieve the outcomes for all cohorts, and work as an important tool against the cycle of social exclusion.

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