Barcelona city council new welfare programme: Economic evaluation results

BMINCOME PROJECT

- **D 7.2.3 Final report: Cost-Benefit Analysis of GMI schemes with a short term time horizon**

- **D 7.2.4 Report on long term efficiency of GMI schemes**

B·MINCOME

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Index

Executive Summary

This report presents the economic evaluation results of the SMI welfare programme implemented by the Barcelona city council as part of the UIA funded BMINCOME project. The analysis provides information on the short-term programme's efficiency, 20 months, for three different perspectives; Barcelona City Council, Public administrations and Societal. A combination of a Cost-Consequences Analysis and a Cost-Effectiveness analysis (CEA) was adopted as economic evaluation method.

The programme's impact on outcomes covering 5 dimensions was explored: General satisfaction with life, social support, health status, working status and education. Cost data was obtained on the services and cash support provided by the Barcelona City Council to participants households. It was also used cost data from services provided by the Regional Government in the areas of Healthcare, education, Housing support and the cash support received by households as part of the Regional minimum income support scheme.

The intervention and control groups were defined based on a lottery process that took place among the interested households that met the programme's requirements. Based on the results of this process, a group of households were defined as the intervention group. Information on services, costs and outcomes for this group was obtained and compared to this same information for households that did not "win" the beforementioned lottery (control group), with the objective of obtaining the effect of the programme policies. It was adopted the "Intention to treat" approach where the results of the groups based on the randomization outcome, and not on actual participation are compared.

The results do not offer a definitive conclusion on the efficiency of the programme. However, some key messages and conclusions can be deduced from the analysis. There are relevant differences between the different programme's types in its implementation costs per household. The range of variation goes from less than 500€ per month for the SMI without activation type to almost 2,000€ monthly for the SMI plus training and employment policy one.

The economic evaluation shows that, in the short term and adopting either the City Council or the Public Administrations perspective, the cost-effectiveness results for the outcomes where statistically significant and positive policy's effects were found are quite high, implying a low cost-effectiveness of the programme.

If the social perspective is adopted, the cost-effectiveness of the SMI programme to achieve better results in the social support, education and health dimensions is not adequate because either the programme is inefficient in absolute terms or it is in relative terms given the high ICERs found. The analysis shows that if the

objective is to increment individuals' satisfaction with life, the SMI without activation policy is the type of intervention with better cost-effective results among the different ones implemented. In the valuation of these economic evaluation's results should be considered the negative impact of the policy as well on the labour outcome. However, it should be considered also that the programme was not aimed at increasing the participants' labour participation in the short term.

Based on these short-term economic evaluation's results, the continuation or scaling-up of the programme modalities with an activation component should be questioned. The results also show that the programme modality without activation policy programme might be a cost-effective option, adopting the societal perspective, to increase individuals' satisfaction with life. It would depend on decision-makers monetary valuation of this outcome and on its monetary valuation of labour outcome

0. Introduction

The B-Mincome project implemented in the City of Barcelona (Catalonia, Spain) was a pilot project that targeted poverty and inequality in deprived areas of Barcelona. The project aimed at improving households' socioeconomic situation and at increasing their economic independence through a new municipal welfare programme. Key components of that programme included a municipal income support benefit and a variety of socio-occupational activation policies.

The programme targeted ten neighbourhoods within Barcelona's Eix Besòs area including Ciutat Meridiana, Vallbona, Torre Baró, Roquetes, and Trinitat Nova (district of Nou Barris); Trinitat Vella, Baró de Viver, and Bon Pastor (district of Sant Andreu); and Verneda-La Pau and Besòs-Maresme (district of Sant Martí). The target area comprises around 7% of Barcelona's total population

The B-MINCOME pilot ran from November 2016 to October 2019. For a period of 22 months (December 2017 – October 2019) programme participants received the income support benefit and took part in activation policies. These are the two key components of the new municipal welfare programme:

✓ **Municipal Inclusion Support benefit (Suport Municipal d'Inclusió, SMI)**. The SMI benefit is a monthly household-based means-tested benefit. The amount of the benefit depends on two factors: household's monthly income and its basic needs, whereby the latter are calculated using a fixed formula that considers household size and composition. The amount of the benefit may vary between a minimum of €100 and a maximum of €1,676 per month. 25% of the monthly transfer is paid out in a local digital currency called REC. REC can be used to pay in various shops in the targeted area.

✓ **Socio-occupational activation policies**. The programme includes four activation policies targeted at training and employment, social entrepreneurship, promoting room rental and promoting community participation. Participants were randomly assigned to one of the four activation policies. These policies will be described in detail below.

- Training and employment. Accredited training programme and municipal employment plan for unemployed participants at working age. The activities are coordinated by Barcelona Activa and last twelve months including occupational training, employment and follow-up.

- Social entrepreneurship. Programme in which participants initiate or take part in social economy and community-interest projects.

- **Promoting room rental**. Housing renovation programme for property-owning households. The programme aims at enabling households to rent out rooms on a commercial basis and thereby improve their income situation.

- **Promoting community participation**. Programme that aims at promoting participation in community activities, collective projects or projects of common interest.

The welfare programme is requested by and granted to individual persons according to the situation of their household. Other members of the household are joint beneficiaries. Only one person per household can request the programme.

The project introduces and compares four different versions of the program regarding conditionality of the SMI benefit (conditional, unconditional) and the withdrawal rate of the benefit (full, partial). More details in relation to these aspects can be found elsewhere[1] :

B-MINCOME was jointly funded by the European Union's Urban Innovative Actions programme and led by the Department of Strategy and Innovation at Barcelona City Council's Area of Social Rights. Project's partners, in charge of designing the programme and evaluating the outcomes, are The Young Foundation, Novact (International Institute for Non-violent Action), Ivàlua (Catalan Institute of Public Policy Evaluation), IGOP-UAB (Institute of Government and Public Policies at the Autonomous University of Barcelona) and UPC (Polytechnic University of Catalonia).

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[1] Timo Verlaat, Federico Todeschini and Laura Kirchner. 2019. B-Mincome Baseline report.

1. Objective

The B-MINCOME project included an impact evaluation and an economic evaluation of the new welfare programme. This report presents the results of the economic evaluation. As in any economic evaluation, its objective is to assess the efficiency of the programme through the conjoint assessment of the impact of the implemented policy on a series of outcomes and of its impact on the use of resources.

The new welfare programme has different modalities, as described in the previous section. Taking this into consideration, the analysis adopts two complementary approaches;

- Evaluating the efficiency of the programme without considering the different modalities of the policy.

- Evaluating the efficiency of the 5 different programme's modalities.

Next section describes the methodology adopted and in section 3 the data and sources of information are detailed. Section 4 presents the analyses' results while in section 5 these are discussed, and limitations of the analysis are pointed out. The last section of the report presents the conclusions and recommendations derived from the economic evaluation's results.

2. Methodology

A previously published report[2] detailed the planned methodology to be adopted for the economic evaluation of the BMINCOME's welfare programme. This section provides a summary of methodology finally adopted in the analysis, highlighting the aspects where the adopted methodology differs from the one initially planned:

- **Method of the economic evaluation**: the adopted method is a combination of a Cost-Consequences Analysis and a Cost-Effectiveness analysis (CEA). The impact of the intervention on outcomes and on costs is first calculated, and then for those outcomes with statistically significant effects, the Incremental Cost Effectiveness Ratios (ICERs) are calculated. The ICER is a statistic to summarise the cost-effectiveness of an intervention or programme. It is defined as the difference in cost between two possible paths of action (in this case the SMI programme versus no additional intervention) divided by the difference in their effect. Therefore, it represents the average incremental cost associated with 1 additional unit of the measure of effect. It was not possible to adopt a Cost-Benefit Analysis (CBA) as information on the monetization values of the selected outcomes was not available.

- **Time horizon**: the duration of the policy has been almost 2 years, from December 2017 to October 2019. At the time of carrying out the analysis, cost data was available up to June 2019. Furthermore, some of the outcomes to be used in the analysis were to be based on the final survey data. This survey took place in June 2019. Therefore, the adopted a time horizon for the analysis goes from November 2017, when participants were communicated that they were going to receive the different components of the B-Mincome, to June 2019. This is a time horizon of 20 months.

The time horizon originally planned for the analysis was longer, with the aim of better informing on the long-term efficiency of the evaluated policies. However, this was not possible because. for most of the outcomes found to be affected by the intervention, there is no clear long-term impact or consequences. Additionally, the intervention might have long-term effects that cannot be estimated as the available data at the present moment would not reflect them. Therefore, an economic evaluation with a long-term time horizon was disregarded for this report. More details with regard to this are provided in the discussion section.

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[2] Kirchner L and Sabes- Figuera R (2018) Report on methodology for efficiency evaluation of GMI schemes. BMINCOME project.

It is necessary to clarify that costs and outcomes have not been discounted despite the analysis's time horizon exceeds one year. The main reason behind that is the lack of the precise data on when exactly the resources were used.

- **Perspective of the analysis**: the results are presented for three different perspectives. The main difference between them is the costs included in each one:

  City council: in this perspective the cost of B-Mincome policy are considered together with other city council services and economic support (transfer payments) received by the target population of the B-Mincome.

  Public administrations: the costs included in this perspective are those of the city council together with those associated with services provided by the regional administration (Generalitat de Catalunya). Problems with data availability have prevented the inclusion of the cost of the services and transfer payments provided by the central administration (Gobierno de España). Nevertheless, as the main responsibilities on services that could have been affected by the evaluated policy -social services, healthcare, and education- are transferred to the local and regional governments, it is expected that this limitation will not have a relevant impact on the results. In fact, the unemployment benefit is the only central government policy that is relevant for this analysis.

  Societal: This perspective includes all the relevant agents of the economy. Therefore, the impact of the policy on the cost supported by the individuals is also considered and taken in account together with the programme's impact on the public administration costs. In this perspective, also called social, it was assumed that the evaluated policy would not have any effect on private companies' costs.

- **Intervention and control groups**: as stated in previous reports, a lottery process took place among the interested households that met the programme's requirements to establish the households that would receive the welfare programme. This process is described in detail elsewhere[3]. Based on the results of this randomization process, a group of households were defined as the intervention group. Information on services, costs and outcomes for this group was obtained and compared to this same information for households that did not "win" the beforementioned lottery (control group), with the objective of obtaining the effect of the programme policies.

It is necessary to clarify that the control and intervention groups defined for the economic evaluation, and indeed for the impact evaluation, were based solely in

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[3] Timo Verlaat, Federico Todeschini and Laura Kirchner. 2019. B-Mincome Baseline report.

the outcome of the randomization process. In other words, there were households that despite having "won" the lottery did not receive the intervention either because they declined to participate or because it was later found out that requirements to participate were not fulfilled. Regardless, they continue to be considered as part of the intervention group for this analysis. This approach of comparing the results of the groups based on the randomization outcome, and not on actual participation, is called "Intention to treat". However, it is relevant to report that none of the households that did not win the lottery, and therefore were part of the control group, received the intervention.

- **Outcomes**: the impact evaluation report of the project[4] presents an exhaustive description of the outcomes considered and the impact of the evaluated policy on these outcomes. Nevertheless, for the economic evaluation analysis, only a selection of outcomes has been considered. The objective of this selection is to have a limited number of indicators that cover the main socioeconomic dimensions associated with the programme. Selected outcomes selected are:

  o <u>General satisfaction</u>: degree of overall satisfaction with life on a scale from 0 to 10, where 0 means totally unsatisfied and 10 totally satisfied.

  o <u>Social support</u>: a measure of social support based on the results of the Duke-UNC Functional Social Support Questionnaire[5].

  o <u>Health status</u>: three outcomes are considered.

      ▪ *Good self-perceived health*: takes a positive value of 1 if the individual states that his health status is excellent, very good or good, and 0 otherwise.

      ▪ *Positive risk of mental illness*: based on the results of the General Health Questionnaire (GHQ-12)[6] and following the validated values for the Spanish population[7], the outcome takes the value of 1 if the results of the GHQ-12 are greater than or equal to 3, meaning that the individual is at risk of suffering anxiety and/or depression, and 0 otherwise.

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[4] Todeschini F & Sabes-Figuera R (2020). BMINCOME. Impact evaluation Report

[5] Broadhead, W. E., Gehlbach, S. H., DeGruy, F. V., & Kaplan, B. H. (1988). The DukeUNC Functional Social Support Questionnaire: Measurement of social support in family medicine patients. Medical Care, 26(7), 709-23.

[6] Goldberg DP, Gater R, Sartorius N, et al. The validity of two versions of the GHQ in the WHO study of mental illness in general health care. Psychol Med. 1997;27:191–7.

[7] Lobo A, Munoz P. Versiones en lengua española validadas. In: Goldberg D, Williams P, editors. Cuestionario de Salud General GHQ (General Health Questionnaire). Guía para el usuario de las distintas versiones. Barcelona, Spain:Masson; 2010.

- *Children health*: number of members under 16 years old that have poor health in the households according to the report of an adult respondent.

- Working status: employment situation according to the social security register. This outcome takes a positive value (1) if the individual has worked in certain period. Otherwise, it takes the value of zero. Given the available data, it was possible to obtain values for this outcome only for monthly periods. Therefore, the value of this outcome was analysed for two different months, *June 2019* and *September 2019*.

- Education results: households where at least one member repeated grades. This outcome is analysed for two academic years, *2018/19* and *2019/20*.

- **Use of resources and costs data:** the services and support received by household members included in the analysis are:

  - Social services department of the City Council (Ajuntament de Barcelona):

    - *Welfare Programme*: the cash transfer associated with the BMincome intervention together with the cost of the different activation policies that were implemented as part of the project. The resources use associated to the administration of the policies were also included.

    - *Social services professionals*: the cost of the contacts between professionals -social workers, psychologists, lawyer- and household's members.

    - *Social services emergency cash support*: this category includes different types of discretional support provided by the Socials services department that have the objective of covering specific unplanned expenses (housing, health, food and clothing, etc)

    - *Resources available to social services users*: access to food banks, emergency social housing, home-based help, nursing care and day care centres.

    - *City council child support*: the amount received by each household was included.

    - *Job placement service*: the access to this service, called Labora, is offered to social services users.

  - Other departments of the city council: the use of the following resources and support received by household members are included:

- *Housing support*: the cash support provided for the payment of housing rents by the housing consortium (Consorci d'Habitatge de Barcelona).

- *Training and employment services*: salaries received because of participation in activation polices provided by a city council entity (Barcelona Activa).

o <u>Regional Government</u> (Generalitat de Catalunya):

- *Education*: access to the different levels of public education by household members, except university. The support provided to the households as part of the Catalan policy of reduced-price lunch is also included here.

- *Housing support*: public subsidies to pay the rent by the Catalan Housing Agency.

- *Minimum income support scheme* (Renda Garantida de Ciutadania): the estimated amount received by each household under this scheme.

- *Public Healthcare*: use of primary care services and most of secondary care (hospitalizations and referrals).

3. Data and sources of information

The data used in the analysis was obtained from several sources. Regarding the outcomes, general satisfaction, social support and health status data was obtained through a survey to participant households (from both intervention and control groups) conducted in June 2019. Education and working status outcomes were constructed from administrative data.

Data for use of services and costs was obtained from various administrative registries. When information on use of resources was registered in units, it was transformed to costs using unitary costs information. These unitary costs, its sources and the administrative databases that were used are described below:

- *Sistema d'Informació d'Acció Social* (*SIAS*): a database that contains information on use of city council social services. It includes both services received and monetary amounts received by social services' users. For the formers, it was necessary to obtain unit costs to calculate total costs.

  The unit cost for the following services were provided by the City Council social services;

  - Food banks
  - Emergency social housing
  - Home-based help
  - Nursing care
  - Day care centres.

  The unit cost for social care professionals, in terms of cost per hour of user contact, was calculated based on their salaries, their annual working hours and an estimation of the proportion of working time in direct contact with users[8]. The estimated costs per hour for the different professionals are:

  - Social worker: 82€/hour
  - Psychologist: 84 €/hour
  - Lawyer[9]: 41€/hour.

  The SIAS database also provided information on the referrals from social services to the job placement service (Labora). Thus, a unit cost per referral to this service was obtained based on published data[10], 302€ per referral.

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[8] Curtis, Lesley A. and Burns, Amanda (2018) Unit Costs of Health and Social Care 2018. Project report. University of Kent

[9] Lawyer unit cost was based in the cost paid by the City Council as it is contracted externally

- *B-Mincome management data*: the management of the project recorded all the payments done to the households that were part of the intervention. Data on city council staff members dedicated to B-Mincome policies was obtained from BMINCOME project justification documents. Data on the monetary amounts that represented the services contracted by the city council as part of the activation policies included in the programme was also obtained[11].

- Data on payments by other public administrations was obtained by the City Council. Specifically, they obtained data on whether participants (from both the intervention and control groups) were beneficiaries of the Catalan *Minimum income support scheme* (Renda Garantida de Ciutadania). Based on this information, the amount received by household member as beneficiaries of this scheme was estimated.

- *Barcelona Activa* database was used to obtain information about the employment services' salaries received, while *Consorci d'Habitatge de Barcelona* database offered information on the rent subsidies received by households. Similar information on rent subsidies was obtained from *Agencia d'Habitatge* database.

- *Consorci d'Educacio de Barcelona* database: provided two different types of information. First, data on whether the households were beneficiaries of the reduced-price lunch policy for children. And second, data on enrolments to the different education grades by the household members for the several academic years. The unit cost of enrolment to each of these grades was estimated based on published data from the Catalan education department on number of students[12] and expenditure[13], by educational level. Desegregation of this data only allows the obtention of the unit cost for two levels, primary and secondary education. Consequently, the values used in the analysis are:

  o Primary education: 3,217€ per student

  o Secondary education: 3,897 per student

- *Sistema d'Informació per al desenvolupament de la Investigació en Atenció Primària* (SIDIAP): this database provided information on the use of primary public healthcare services and on the use of some of the specialized public healthcare (hospitalizations and referrals from primary care to specialized

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[10] Memoria Programa Labora 2018. Available at
https://ajuntament.barcelona.cat/dretssocials/sites/default/files/arxius-documents/memoria-labora-2018.pdf

[11] In the costing of the B-Mincome intervention, the staff and contracts associated to the evaluation of the interventions were not included.

[12] http://ensenyament.gencat.cat/ca/departament/estadistiques/estadistiques-ensenyament/

[13] http://ensenyament.gencat.cat/ca/departament/estadistiques/despesa/

care). It also contained information on the publicly-funded drug prescriptions and its costs. This data was combined with information on the unit costs of services to estimate the cost of the use of these public healthcare services by household members. The unit costs used in this estimation are based on the official tariffs of the Catalan Healthcare system[14]:

- General practitioner visit at primary care centre: 40€
- General practitioner visit at home: 65€
- Nurse visit at primary care centre: 28€
- Nurse visit at home : 45€
- Social worker visit at primary care centre: 28€
- Social worker visit at home: 45€
- Blood analysis: 45€
- Urine analysis: 45€
- Image diagnosis test (abdomen): 59€
- Image diagnosis test (thorax): 134€
- X-Ray abdomen: 9€
- X-Ray Thorax: 9€
- Referral to specialized care: 55€
- Vaccinations : 9€
- Hospital day (1-5 days): 608€
- Hospital day (from the 6th day of stay): 455€
- Less than 1-day hospitalization: 183€

There are two relevant characteristics of the SIDIAP data that are worth mentioning. First, it did not include data for all the analysis period (from November 2017 to June 2019), but only until December 31st 2018. Second, while for the other types of data it was always possible to keep the same household unique identifier, this was not possible for healthcare data. Indeed, the unit of analysis of this data was the individual instead of the household. This implies that it was not possible to add healthcare costs to the rest of estimated costs. Therefore, the impact of the intervention on healthcare costs is analysed separately.

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[14] Ordre SLT/30/2013, de 20 de febrer, per la qual s'aproven els preus públics del Servei Català de la Salut i Ordre SLT/79/2014, de 12 de març, per la qual es determinen per a l'any 2014 els preus unitaris i la resta de valors a què es refereix l'article 5 del Decret 170/2010, de 16 de novembre, de regulació del sistema de pagament de serveis sanitaris en l'àmbit del Servei Català de la Salut

4. Results

In this section, the results of the different analysis that have been carried out are presented. First, the randomization process through which it was established which households would have the right to receive BMincome is summarized. Then, data on the number of households that in fact participated in the different modalities of the policy is presented, and then compared to those that were assigned to participate. The comparison between these two pieces of information is relevant given that the economic evaluation is based on the assignment to the different policies as a result of the randomization process and not on actual participation in them (intention to treat approach). Despite this, before presenting the economic evaluation results, a descriptive analysis of the outcomes and costs results based on actual participation is also reported. However, it is important to remember that it is not possible from the results of this analysis to infer the effect or impact of the evaluated policies. Finally, the results of the economic evaluation using the intention to treat approach and the already defined strategies are presented.

4.1. Participant Households

Randomization process

A brief summary of the randomization process that was followed to assign households to either the intervention group or the control group, an to specific modalities of the intervention is presented below.

Among all the households that applied to participate in the intervention, 1527 were considered to fulfil the policy criteria before the lottery, so they entered the randomization process. Of those, 1000 were assigned to one of the programme modalities (SMI policy) while 383 were classified as control group. The remaining 144 households were categorized as reserve participants, meaning that if any of the 1000 families assigned to the intervention group declined to participate, a reserve household would be invited to replace it as a participant.

Table 1. Randomization assignment and type of intervention

Type of policy		Number of Households
SMI without activation policy	Unlimited/ Partial withdrawal	250
	Limited/ Full withdrawal	200
SMI +Training and employment policy	Unconditional	75
	Conditional	75
SMI + Social entrepreneurship policy	Unconditional	50
	Conditional	50
SMI + Room rental promotion policy	Unconditional	12
	Conditional	12
SMI + Community participation promotion policy	Unlimited/ Partial withdrawal	138
	Limited/ Full withdrawal	138
No policy	Control Group	383
	Reserves	144

Source: own elaboration based on Barcelona City Council data

The distribution of the households between modalities according to the main characteristics of the policy is described in the following table.

Table 2 Characteristics of the intervention

Characteristic	Number of Households	
Activation Policy	Cash transfer only	Cash transfer only + activation policy
	450	550
Conditionality	Unconditional	Conditional
	863	137
Additional private income	Unlimited/ Partial withdrawal	Limited/ Full withdrawal
	662	338

Source: own elaboration based on Barcelona City Council data

The outcome of the randomization is the basis over which the economic evaluation analysis has been carried out, comparing outcomes and costs of the households assigned to the SMI Policy (treatment group) to those assigned to the control group, independently of whether they actually participated or not in the

evaluated policy. This is, an "intention to treat" approach was adopted. Nevertheless, there are two clarifications to be made with regard to the economic evaluation analysis; first, none of the households that fulfilled the criteria to participate in the room rental promotion policy were assigned to the control group, as the number of eligible households was very low. Thus, the 24 households initially assigned to this policy are not included in the analysis; second, 9 households, 4 from the intervention and 5 from the control group, were excluded from the analysis since cost data was not available for them.

Policy beneficiaries and participation

All 1000 households assigned to the intervention group were contacted to establish whether they fulfilled the eligibility criteria and whether they were still interested in participating in the pilot policy under the established conditions. As a result of this process, 145 households were either excluded for eligibility issues or declined to participate. These were then replaced by 88 households from the reserve group. Furthermore, some households received a policy modality that did not correspond to the one assigned through the randomization process. Actual participation in the different activation policies was also monitored throughout the period of implementation. This information is summarized in the following table:

Table 3 Policy's beneficiaries and actual participation

Type of policy	Number of Households			
	Initially assigned	Reserve group	Total	Participation in activation policy
SMI without activation policy	378	37	415	nd
SMI +Training and employment policy	114	36	150	115
SMI + Social entrepreneurship policy	90	9	99	63
SMI + Room rental promotion policy	10	0	10	0
SMI + Community participation promotion policy	263	6	269	186
Total	**855**	**88**	**943**	**364**

Source: own elaboration based on Barcelona City Council data

The data displayed in this table on participation was used to calculate and redistribute the programme management and the corresponding activation policy costs across the households. It is also the basis for the descriptive analysis of the

outcomes and costs that is presented in the next section of this report. For this analysis, households that did not participate in the corresponding activation policy were added to the SMI without activation policy group.

4.2.   Descriptive analysis

The results presented in this section are based on the final assignment of participant households to the different policy modalities, which differs from the original assignment that emerged from the randomization process.

4.2.1.   Descriptive analysis of outcomes

The following table displays, by type of activation policy in which they participated, the percentage of households with data available on the different outcomes. Outcomes are based on two types of information: a survey that took place in June 2019 and administrative data. Survey data is not available for all the households for several reasons: first, households that were initially assigned to the reserve group by the lottery were not asked to take part in the survey; second, it was not possible to contact some of the households to do the survey; and last, some households declined to answer it. As a result, for those outcomes that are based on survey data- general satisfaction, self-perceived health, risk of mental illness, children health and social support- we do not have information for these households. Regarding administrative data, it was not possible to obtain information on education status for those 88 households in the reserve group that did actually participate in the intervention. In contrast, administrative data used to estimate working status of the household head was available for all participant households.

Table 4 Data availability for the outcomes' descriptive results

Outcome	Control Group	Receiving SMI Policy	Type of policy			
			SMI (cash transfer)	SMI + Community participation prom.	SMI +Training and employ.	SMI + Social entrepr.
Households with Survey data	65%	76%	76%	80%	66%	73%
General satisfaction (scale 0-10)	64%	75%	75%	79%	65%	73%
Good (or better) Self-perceived health	65%	75%	76%	80%	66%	73%
Positive risk of mental illness (GHQ-12)	52%	62%	63%	67%	56%	62%
Children Health (number of under 16 years old members that have poor health)	65%	76%	76%	80%	66%	73%
Social Support (Duke Scale)	65%	76%	76%	80%	66%	73%
Education results: if any household member has repeated grades	100%	90,7%	91,3%	96,8%	75,7%	93,9%
Working status: if the household head has worked during this month	100%	100%	100%	100%	na	100%

Source: own elaboration based on BMINCOME survey data

The results of the descriptive analysis of the outcome data are presented in the following table, which contains average value for each outcome variable for households with available data, by the type of policy the household participated in.

Table 5 Outcomes' descriptive results: Mean values

Outcomes	Control Group	Receiving SMI Policy	Type of policy			
			SMI (cash transfer)	SMI + Community participation prom.	SMI +Training and employ.	SMI + Social entrepr.
General satisfaction (scale 0-10)	5,15	6,38	6,28	6,68	6,48	6,25
Good (or better) Self-perceived health	46,9%	45,1%	45,1%	42,3%	46,1%	52,1%
Positive risk of mental illness (GHQ-12)	64.4%	62.0%	62.6%	56.1%	63.6%	73.2%
Children Health (number of under 16 years old members that have poor health)	1,15	1,05	1,02	1,14	0,95	1,23
Social Support (Duke Scale)	35,00	34,79	34,51	36,80	34,39	31,73
Education results: Any household member has repeated grades						
Academic year 18/19	9,3%	8,5%	10,4%	6,7%	7,5%	0,0%
Academic year 19/20	8,6%	8,5%	8,1%	6,7%	12,5%	10,9%
Working status: Household head has worked during this month						
June 2019	45,2%	31,0%	31,9%	28,0%	na	31,8%
September 2019	43,4%	31,5%	31,8%	30,1%	na	33,3%

Source: own elaboration based on BMINCOME survey data

When analysing this table, it is important to keep in mind that observed differences between intervention groups cannot be attribute to participation in the different policies. Since actual participation, and not randomization, is used to assign households to the different groups under comparison, the differences in outcome results across groups can be caused by differences in households' characteristic and not participation in BMincome. The exercise to attribute observed differences to the program has to be based on the randomized assignment, which is carried out in the economic evaluation section of this report.

4.2.2.   Descriptive analysis of costs

The analysis of use available resources and costs data permitted the estimation of costs for each household. In this section, a series of descriptive analysis of the costs data are performed. As in the previous section, final assignment to the different types of programme is used for these analyses, and not on the one resulting from randomization. The presented cost data includes use of services and support (cash transfers) received by household members from the beginning of the policy, November 2017, until June 2019, when the survey used to calculate some of the outcomes was carried out, although the policy ended in October 2019.

First, the cost analysis of the SMI policy by type of policy is presented in the table below. Costs are disaggregated in three categories; administrative cost of the intervention, cost of the cash transfer and cost of the implemented activation policies. To calculate the latter, total cost of the activation policies was divided by the number of households that actively participated in them.

Table 6 SMI policy average cost per household (€)

Type of cost	Type of policy				ALL
	SMI	SMI + Community participation prom.	SMI +Training and employ.	SMI + Social entrepr.	
Number of Households	576	186	115	66	943
Management/administration (€)	1,420	1,420	1,420	1,420	1,420
Cash transfer (€)	7,831	8,586	4,591	9,871	7,727
Activation policy (€)	--	1,981	33,883	7,618	5,056
Total (€)	**9,251**	**11,987**	**39,894**	**18,909**	**14,204**

Source: own elaboration based on Barcelona City Council data

In these calculations, the cost of the contacts between household members and the city council social services workers was not included. Although there was a group of socials workers dealing only with households that participated in BMincome, this implied that participant households did not contact other city council's social workers. For this reason, it was decided to include this cost in the general category of "contact with social services professionals".

The following table displays information on the average cost per household of the resources that have been included in the analysis. In this case, information is only

disaggregated by whether the household was a beneficiary of the policy or not. This table also provides information on the percentage of households with positive costs for each category, meaning that either they had done some use or been beneficiary of the corresponding service or policy.

Table 7 Average cost of services and support (€) per household

Services/resources	Receiving SMI Policy (n=943)		Control Group (n=378)	
	% of households with positive costs	Average costs (€)	% of households with positive costs	Average costs (€)
Social services professionals (Ajuntament de Barcelona)	90%	439	80%	531
Social services cash support and resources (Ajuntament de Barcelona)	78%	1,852	80%	1,989
Job placement service (Labora /Ajuntament de Barcelona)	15%	58	22%	89
Training and employment services (Barcelona Activa/Ajuntament de Barcelona)	6%	455	5%	330
Housing support (Consorci d'Habitatge/Ajuntament de Barcelona)	3%	165	4%	200
Enrolment at education grades (Generalitat de Catalunya)	77%	6,410	80%	6,785
Reduced price lunch Policy (Generalitat de Catalunya)	77%	1,365	80%	1,375
Housing support (Agencia d'Habitatge/Generalitat de Catalunya)	17%	475	20%	522
Minimum income support scheme (Renda Garantida de Ciutadania/Generalitat de Catalunya)	13%	1,377	9%	935

Source: own elaboration based on different data sources

The last descriptive analysis that has been carried out classifies and aggregates costs depending on the level of public administration that covered each cost. Given the relevance of the city council social services in the policy under analysis and in other services provided to the beneficiaries and to the members of the control group, costs for this department of the Barcelona City Council have been calculated separately. It is important to clarify that a significant share of the costs of the SMI policy, the salaries paid through the training and employment activation

policy, were paid by Barcelona Activa, a city council entity that is not part of the social services department. The rest of the costs of the SMI policy were covered by this area. This analysis is presented in the following table.

Table 8 Average cost (€) per household by level of public administration

Level of administration	Control Group	Receiving SMI Policy	Type of policy			
			SMI (cash transfer)	SMI + Community participation prom.	SMI +Training and employ.	SMI + Social entrepr.
City Council Social Services	2,608	13,987	11,478	14,560	21,563	21,069
Other city council departments	530	3,185	580	575	21,894	673
Regional Government	9,617	9,627	9,747	10,311	7,911	9,641
Total	12,755	26,799	21,805	25,446	51,367	31,383

Source: own elaboration based on different data sources

There is a relevant category of costs that has not been included in this descriptive analysis: public healthcare costs. This exclusion is due to the impossibility to obtain data on the use of healthcare services in a format that would allow linking it to other data on use of services. Furthermore, the required anonymization process of this data, which was at individual level, made impossible to establish whether data belonged to individuals from participant households or to non-participants. In fact, it was only possible to establish to which of the groups emerging from the randomization process did these individuals belong. Therefore, healthcare costs are analysed separately from the rest of the costs at the economic evaluation part of the analysis.

4.3.   Economic evaluation analysis

The efficiency analysis of the SMI policy, as has been stated before in this report, adopted an intention to treat approach. This means that the effect of the SMI policy and of its different modalities on the selected outcomes and on costs was calculated based on the groups emerging from the randomization. In this process, 1000 households were assigned to one of the 5 types of policies and 383 were assigned to the control group, meaning that they would not receive the new policy,

but would continue with usual access to the services provided by the city council social services.

The economic evaluation has compared the costs and outcomes of these two groups using two different, but complementary, approaches. First, directly comparing the outcomes and costs of households assigned to the intervention group to those in the control group. This first analysis does not consider the different types of intervention (type of activation policy or the lack of it) associated with the SMI policy. Instead, the second analysis does consider the different types of policies, allowing the estimation of its effects. As explained in the associated impact report of the B-Mincome project, these analyses adjusted by those household characteristics that were taken in consideration during the randomization process. Concretely, the potential value of the SMI cash transfer and whether there was at least one member in the household who was employable. For the economic evaluation analysis, an additional characteristic was added: the number of members under 16 years old in the household.

The sample used for the economic evaluation analysis is influenced by the source of the outcome data (survey or administrative data), implying that not all the outcomes are calculated using the same sample of households. This needs to be taken into account when estimating the effect of the policy on costs, given that when comparing the effects of the interventions on outcomes and on costs, the sample of households should be the same. As a consequence, two separate analyses of the impact of the intervention on costs are carried out depending on the information source: one for the sample of households with administrative data and another one with those that have survey data. Additionally, there are 9 households for which cost data is not available that will be excluded from all the analyses. Finally, households assigned to the room rental promotion activation policy are also excluded as there are not similar households in the control group.

The analyses are carried out using three different perspectives; the City Council perspective, the public administrations perspective and the societal perspective. As mentioned before, it was not possible to add households' healthcare costs to the rest of the concepts. Therefore, a separate analysis will be carried out to explore the effect of the intervention in healthcare costs.

The public administrations perspective includes all the costs associated with the intervention for the two administrations considered, the city council and the regional government. Moreover, adopting the societal perspective there are some methodological aspects to consider when calculating the costs effects of the intervention:

- When allowed by available data, salary costs are adjusted to consider the distortions of the labour market. The applied correction value is 0.9[15] (i.e. the calculated costs are multiplied by this figure).

- The value-added tax that the City Council payed when contracting out some of the services included in the activation policies is not considered as a cost under the societal perspective.

- The monetary amounts that each household received as part of the SMI intervention and as beneficiaries of the regional minimum income scheme are considered to be costs for the city council and for the regional government respectively. However, when adopting the societal perspective these amounts are considered benefits for the individuals as are monetary transfers[16]. Therefore, these concepts -the SMI transfers and the minimum income scheme- are not included in the cost analysis under the societal perspective as they are cancelled out.

4.3.1.   Analysis of programme vs Control

The tables below present the results of the analyses of the impact of the policy on costs and outcomes without considering to which specific type of policy the households were assigned. As mentioned before, the impact on costs are calculated twice: once with the whole sample (administrative data sample) and once with the sample of households that answered the final survey (survey data sample).

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[15]

http://economia.gencat.cat/web/.content/70_analisi_finances_publiques_avaluacio_politiques_publiques/arxius/Notes/NM-Factor-treball.pdf

[16]

http://economia.gencat.cat/web/.content/70_analisi_finances_publiques_avaluacio_politiques_publiques/arxius/Notes/NM-Errors-mes-frequeents.pdf

Table 9 Intervention's impact on costs and outcomes. Administrative data sample

Costs	Impact of policy (β)	SE
City Council Perspective	13522.428***	576.80
Public Administrations Perspective	13629.052***	658.39
Societal Perspective	5047.008***	571.42

Outcomes	Impact of policy (β)	SE
General satisfaction (scale 0-10)	1.148***	0.19
Good (or better) Self-perceived health	-0.002	0.04
Positive risk of mental illness (GHQ-12)	-0.016	0.04
Children Health (number of under 16 years old members that have poor health)	-0.102	0.09
Social Support (Duke Scale)	0.536	0.79

* p<0.10   ** p<0.05   *** p<0.01

Table 10 Intervention's impact on costs and outcomes. Administrative data sample

Costs	Impact of policy (β)	SE
City Council Perspective	12849.231***	478.52
Public Administrations Perspective	12845.231***	541.92
Societal Perspective	4717.547***	467.76

Outcomes	Impact of policy (β)	SE
Education results: if any member of household has repeated grades		
Academic year 18/19	-0.015	0.020
Academic year 19/20	-0.001	0.020
Working status: if the head of the household has worked during this month		
June 2019	-0.112***	0.03
September 2019	-0.086***	0.03

* p<0.10   ** p<0.05   *** p<0.01

As shown in the tables, the impact of the policy on costs is very similar for the two calculations. Households that were assigned to the policy have an estimated cost that is around 13,000€ per household higher when adopting the City Council and the Public Administrations perspectives, over a period of 20 months. When adopting the societal perspective, the impact of the policy on costs is lower and

estimated to be around 5,000€ per household over 20 months. Since there are a series of costs that are included in the analyses adopting public administration perspectives but not in the societal one, this lower cost is expected. The estimated differences in the costs between the intervention and the control group are statistically significant at a 1% level for the three perspectives.

The results of the analyses of the impact of the policy on the evaluated outcomes show that the intervention has a positive effect on general satisfaction of the household's head. It is estimated that being assigned to the intervention group produces an increment of 1.15 points in the measure of satisfaction with life. This measure is based on a question where respondents were asked to score their satisfaction with life in a 0 to 10 scale, where zero meant totally unsatisfied and ten totally satisfied. This result is statistically significant at a 0.01 level.

The impact of the program on the working status of the household's head was also found to be statistically significant. In this case, being part of the intervention group reduces the probability of having worked during the months of June 2019 and September 2019, 11.2% and 8.6% respectively. It is important for the interpretation of these results to remember that in the analysis of labour outcomes, households that were assigned to the training and employment activation policy were not included. The results also show that, for the remaining outcomes under analysis, the intervention had no effect.

Based on these results, the incremental cost effectiveness ratios (ICER) for the general satisfaction with life outcome are estimated under the three perspectives, as it is the only outcome with a positive and statistically significant effect.

Table 11 incremental cost effectiveness ratios (ICER) for the general satisfaction with life outcome

Perspective	ICER General satisfaction
City Council	11,779 €
Public Administrations	11,872 €
Social	4,396 €

These ICERs present the information on what is the incremental cost associated with a gain of 1 point in the general satisfaction with life scale due to the programme. In other words, each additional point in the satisfaction scale is obtained thanks to the SMI policy for an additional cost of almost 12,000€ for the City council of Barcelona and almost 4,400€ for the whole society.

In the case of the working status of the household head, as the intervention had a negative impact on the probability of being employed and the costs are higher, it is not necessary to calculate the ICER as, based only in this outcome, the programme is deemed not efficient.

4.3.2.   Analysis of programme by type vs Control

In this section, the analysis is repeated taking into consideration the different types of policies (activation policy vs no activation policy and type of activation policy), showing the effect of being assigned to each policy type compared to being assigned to the control group.

Table 12 Intervention's impact on costs and outcomes by type of policy. Survey data sample

	SMI without activation policy		SMI + Social entrepreneurship policy		SMI + Training and employment policy		SMI + Community participation promotion policy	
Costs	**Impact of policy (β)**	**SE**	**Impact of policy (β)**	**SE**	**Impact of policy (β)**	**SE**	**Impact of policy (β)**	**SE**
City Council Perspective	9203***	472	15953***	1028	28001***	1654	10311***	668
Public Administrations Perspective	9436***	595	16033***	1231	28381***	1710	10052***	761
Societal Perspective	688	431	5808***	821	21069***	1603	1459**	603

Outcomes	**Impact of policy (β)**	**SE**	**Impact of policy (β)**	**SE**	**Impact of policy (β)**	**SE**	**Impact of policy (β)**	**SE**
General satisfaction (scale 0-10)	1.204***	0.21	0.704**	0.34	1.087***	0.27	1.238***	0.24
Good (or better) Self-perceived health	0.031	0.04	0.018	0.07	-0.06	0.06	-0.023	0.05
Positive risk of mental illness (GHQ-12)	-0.033	0.04	0.078	0.07	-0.05	0.06	0.005	0.05
Children Health (<16 years members that have poor health)	-0.099	0.1	-0.063	0.18	-0.203	0.13	-0.048	0.11
Social Support (Duke Scale)	0.004	0.92	-1.333	1.47	1.138	1.18	1.601*	0.97

* p<0.10   ** p<0.05   *** p<0.01

Table 13 Intervention's impact on costs and outcomes by type of policy. Administrative data sample

Costs	SMI without activation policy		SMI + Social entrepreneurship policy		SMI + Training and employment policy		SMI + Community participation promotion policy	
	Impact of policy (β)	SE	Impact of policy (β)	SE	Impact of policy (β)	SE	Impact of policy (β)	SE
City Council Perspective	8808***	401	14481***	939	26106***	1522	10349***	573
Public Administrations Perspective	9045***	506	14237***	1095	26063***	1588	10069***	646
Societal Perspective	854**	357	4851***	718	19227***	1476	1687***	496

Outcomes	Impact of policy (β)	SE	Impact of policy (β)	SE	Impact of policy (β)	SE	Impact of policy (β)	SE
Education results: if any member of the household has repeated grades								
Academic year 18/19	-0.005	0.020	-0.067***	0.020	-0.040	0.030	0.006	0.030
Academic year 19/20	-0.003	0.020	0.009	0.040	0.033	0.030	-0.025	0.020
Working status : if the head of the household has worked during this month								
June 2019	-0.093***	0.03	-0.109**	0.05			-0.143***	0.04
September 2019	-0.059*	0.03	-0.101*	0.05			-0.125***	0.04

* p<0.10   ** p<0.05   *** p<0.01

Regarding the outcomes' analysis, being assigned to the community participation or the promotion policy improves satisfaction with life the most. Furthermore, a positive impact of this policy in the scale that measure the individuals' social support is also found. However, this policy is also the one where the reduction in the probability of having worked in the 2 analysed months is the biggest. For the social entrepreneurship modality, a reduction of the probability of repeating academic grades is also found.

Concerning the costs' analysis, there are relevant cost differences between the different policy types. Among the types with an associated activation policy, the training and employment one is the one with the highest cost effect in relation to the control group, followed by the social entrepreneurship one. This is true for the three analysed perspectives. Another relevant result is that there are no differences, or at least not statically significant differences, between the societal cost of the policy without activation policy and the societal cost of the no policy scenario. In fact, it is worth keeping in mind that when adopting the societal perspective, monetary transfers as the SMI are not included as costs. Therefore, for the no activation policy group the cost of the policy is only its management and administrative cost.

The following tables show the ICERs for the outcomes with a statistically significant effect, only for those modalities where significance is found.

Table 14 incremental cost effectiveness ratios (ICER) for Social support outcome

ICER -Social support (Duke scale)	
Perspective	**SMI + Community participation promotion policy vs Control group**
City Council	6,440 €
Public Administrations	6,279 €
Social	911 €

For the social support outcome, each point gained in the Duke scale through the SMI and Community participation promotion policy has an additional social cost of 911€. As a reminder, the range of this scale goes from 11 to 55 points.

Table 15 incremental cost effectiveness ratios(ICER) for educational outcome

ICER -Households with Repetition of grades	
Perspective	**SMI + Social entrepreneurship policy vs control group**
City Council	131,463 €
Public Administrations	135,000 €
Social	12,746 €

Adopting the societal perspective, the ICER for the educational outcome of the SMI with Social entrepreneurship policy when compared to the control group is 12,746€. This value implies that this policy can prevent that a children from the household to repeat grade for an additional cost of 12,746€.

The table below shows the ICERs for the general satisfaction outcome. This result requires some additional explanation. Firstly, all the program modalities have a significant effect on life satisfaction when compared to the control group. However, when comparing costs and outcomes for the different modalities, there are policies with both higher costs and lower impacts. This means that these options are dominated by more efficient ones, and therefore should not be included in the ICERs calculation. For the general satisfaction outcome, this is the case for the SMI plus Social entrepreneurship policy and the SMI plus Training and employment policy. Secondly, when the alternatives considered are more than two, the ICERs should be calculated after ordering the interventions by its effectiveness. Then, each intervention is compared to the next most effective alternative by calculating the incremental cost-effectiveness ratio.

Table 16. Incremental cost effectiveness ratios (ICER). General satisfaction outcome

ICER -General satisfaction		
Perspective	**SMI without activation policy vs control group**	**SMI + Community participation promotion policy vs SMI without activation policy.**
City Council	7,644 €	32,588 €
Public Administrations	7,837 €	18,118 €
Social	571 €	22,676 €

The analysis found that the incremental cost to gain 1 point in the satisfaction scale with the SMI programme without activation policy compared to the control group is 571€. In turn, SMI plus Community participation promotion policy increases the satisfaction scale by 1 point in relation to the SMI without activation policy at an additional social cost of 22,676€.

4.3.3.   Additional cost analyses

The table below presents the results of the analysis of the programme's impact on healthcare costs under the two approaches; considering the different types of policy and without considering them. Although a positive effect is found, this is not statistically significant.

Table 17 Intervention's impact on healthcare costs

Costs	Impact of policy (β)						SE	
Intervention vs control	71						65	
	SMI without activation policy		SMI + Social entrepreneurship policy		SMI + Training and employment policy		SMI + Community participation promotion policy	
Costs	Impact of policy (β)	SE	Impact of policy (β)	SE	Impact of policy (β)	SE	Impact of policy (β)	SE
Type of Intervention vs control	90	75	103	171	28	87	59	96

Another analysis was carried out to explore the intervention effect on the city council costs without including the intervention costs. The results of this analysis are presented in the table below. They show that, when these costs are not included, the intervention reduces the City council costs. However, this reduction is not statistically significant and furthermore the size of it is quite small, amounting 267 € over a period of 20 months.

Table 18 Intervention's impact on city council costs without including the cost of the policy. Administrative data sample

Costs	Impact of policy (β)	SE
Intervention vs control	-267	236

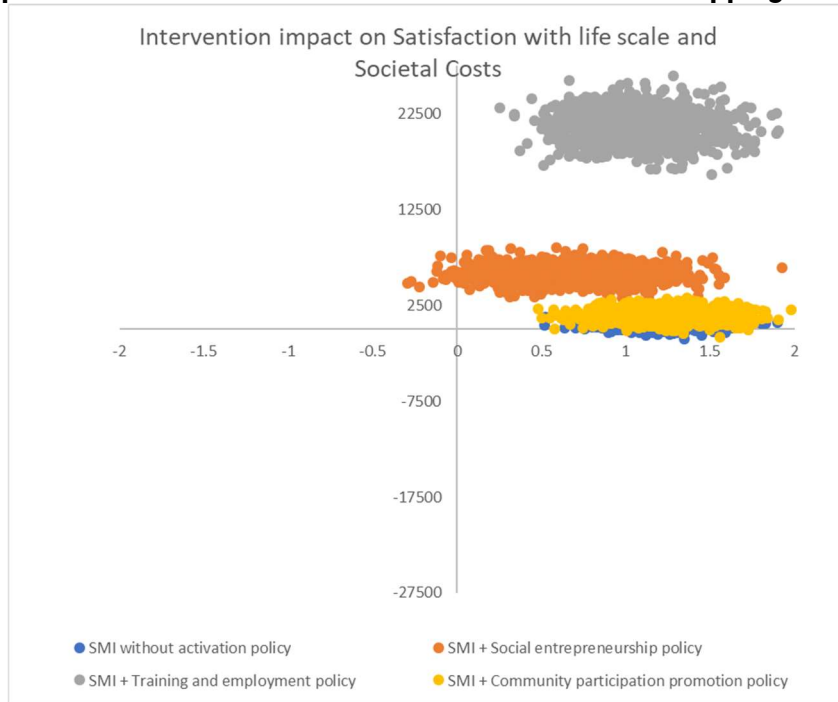| Costs	SMI without activation policy		SMI + Social entrepreneurship policy		SMI + Training and employment policy		SMI + Community participation promotion policy	
	Impact of policy (β)	SE	Impact of policy (β)	SE	Impact of policy (β)	SE	Impact of policy (β)	SE
Type of Intervention vs control	-396	248	-625*	377	-100	446	-35	406

4.4.   Sensitivity analysis

The variability of the presented results was explored through a bootstrapping exercise. In this type of exercise, a large number of "artificial" samples based on the original one is generated and then the intervention impact on costs and outcomes is calculated for each of these generated samples. The samples are generated through bootstrapping which involves resampling with replacement[17.] Then, the variability of the original results can be visualized in a graph where the intervention impact for each artificial sample is displayed. However, only the impact on one outcome with its corresponding impact on cost can be displayed per graph. This is a limitation in economic evaluations like the one presented in this report where not only one but several outcomes are considered.

The following graphs display the results of the bootstrapping exercise for two outcomes for which statistically significant differences between the control and the intervention groups were found; satisfaction with life and the probability of having worked in September 2019. The corresponding graphs for the other two outcomes for which some programme types had a significant effect (probability of repeating a grade and social support) are not displayed for different reasons. In the case of the social support outcome, the effect is significant at 10% level, which sometimes can be considered non-significant. In the case of the educational outcome, the estimated ICERs values were too high, especially for the perspective of the administration that would implement the policy.
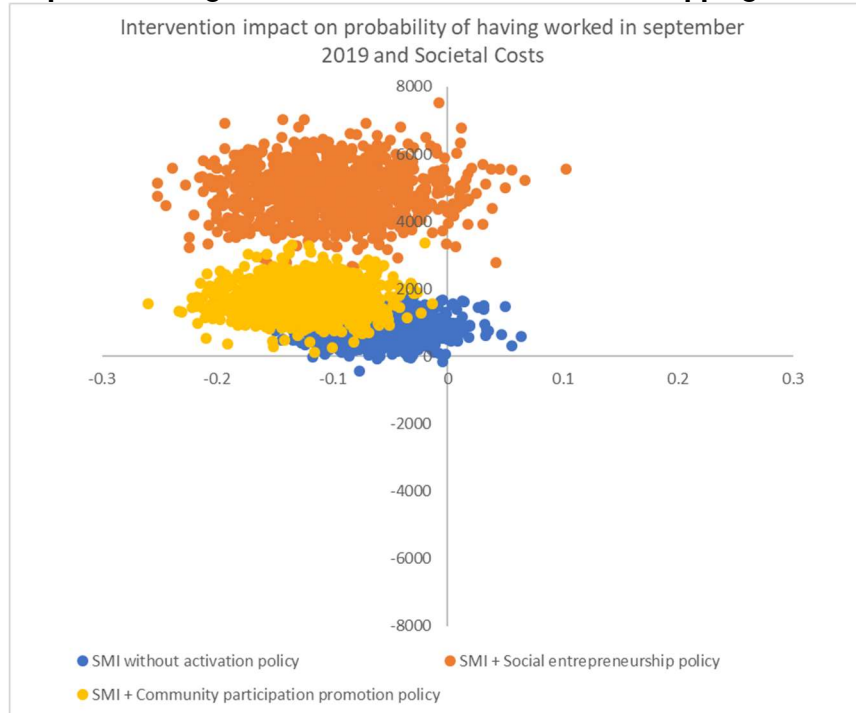
In each graph, the impact of the policy on costs from the societal perspective is represented in the horizontal axis, while the impact on the selected outcome is represented in the vertical axis.

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[17] Mooney C, Duval R: Bootstrapping: a Non-parametric Approach to Statistical Inference. Sage: London. London: Sage; 1993

Graph 1 Satisfaction with life and societal costs: bootstrapping exercise

Intervention impact on Satisfaction with life scale and Societal Costs

- SMI without activation policy
- SMI + Social entrepreneurship policy
- SMI + Training and employment policy
- SMI + Community participation promotion policy

Graph 2 Working status and societal costs: bootstrapping exercise

Intervention impact on probability of having worked in september 2019 and Societal Costs

- SMI without activation policy
- SMI + Social entrepreneurship policy
- SMI + Community participation promotion policy

Despite some visualization issues, as the values for the no activation policy group and those of the community participation promotion policy group overlap, there are some messages to be extracted. First, regarding satisfaction with life and social support, the data seems to suggest that the training and employment and the social entrepreneurship policies have the worse cost-effectiveness results;

they are more costly than other options and they did not produce better outcome results. Indeed, the social entrepreneurship policy has the worst outcome. With regard to the working status outcome, it also seems that the group with no activation policy has better outcomes that the social entrepreneurship one at lower costs. As it has been mentioned before, these policy options which are more costly than others without producing better outcome results are called dominated options and should discarded for implementation based on their lower efficiency. This same conclusion can be extracted from the previously presented tables, although the sensitivity analysis adds robustness to the conclusion.
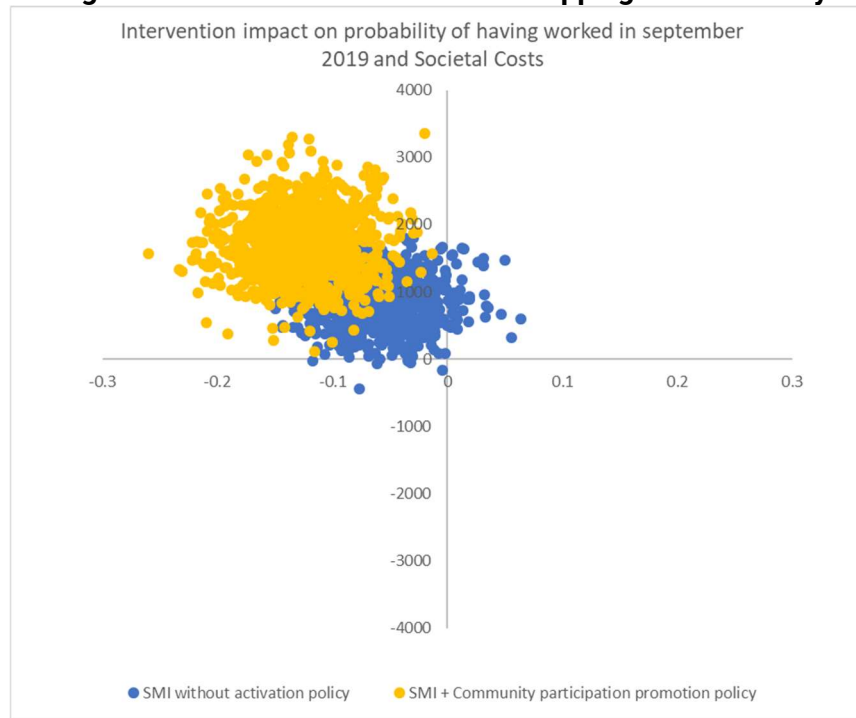
Regarding the discard or rejection of policy options based on the economic evaluation results, it is important to highlight that the efficiency analysis presented in this report only considers short term costs and effects and has some limitations. In the next section, limitations are discussed in detail.

The sensitivity analysis considering only the two policy options that have not been "theoretically" rejected by previous exercises are explored more in detail.

Graph 3 Satisfaction with life and societal costs: bootstrapping exercise. Only two policies.
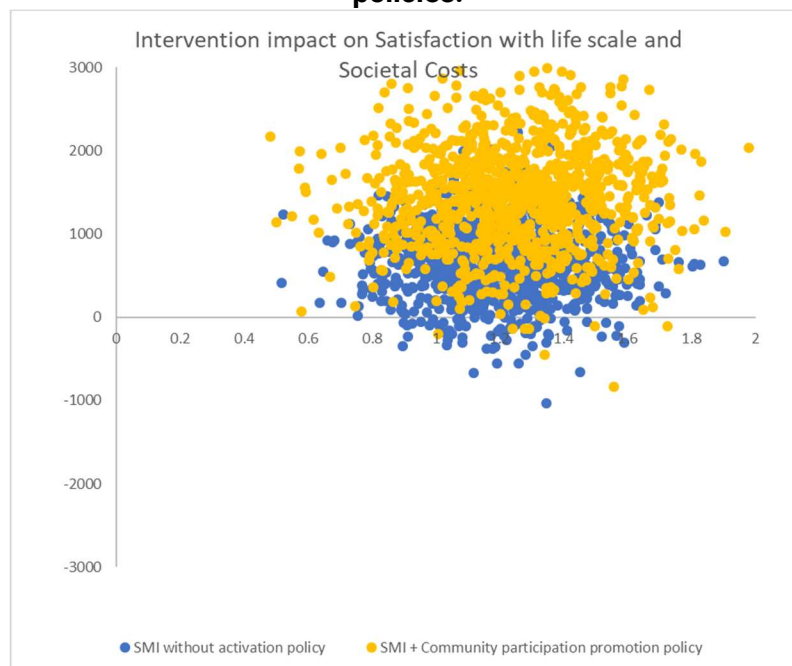
Graph 4 Working status and societal costs: bootstrapping exercise. Only two policies.

Intervention impact on probability of having worked in september 2019 and Societal Costs

● SMI without activation policy   ● SMI + Community participation promotion policy

From the analysis of these graphs it can be deduced that there are almost no differences in terms of general satisfaction with life between the SMI plus community participation promotion policy and the SMI without activation policy. However, the later policy has a better outcome, in this case less negative, than the former in terms of the labour market outcome. The corresponding graph also shows that the variability of this outcome seems to be lower than the one found for the general satisfaction one. On top of that, the cost per household is higher for the community participation promotion policy, with the difference being around 700-800€ per household over a period of 20 months.

The data obtained from the bootstrapping exercise is also the basis for constructing Cost-Effectiveness Acceptability Curves (CEACs). These curves show the probability of an intervention or programme being cost-effective for different values of the monetary valuation of a unit of effectiveness. In other words, based on the economic evaluation analysis, depending on what would be the hypothetical value of the outcome, what is the probability of the programme being efficient.

The graph below displays the CEAC for the SMI without activation policy programme when compared to the no policy option for the satisfaction with life outcome. As it has been previously shown, the no activation policy type of the SMI programme is the one with the best cost-effectiveness results in terms of the satisfaction outcome, the only outcome where positive effects of the intervention were found. The CEAC shows that the monetary valuation of -or willingness to pay

for it- an increase of one unit in the satisfaction scale must be higher than 580€ for this type of the programme to have more than 50% chance of being cost-effective.
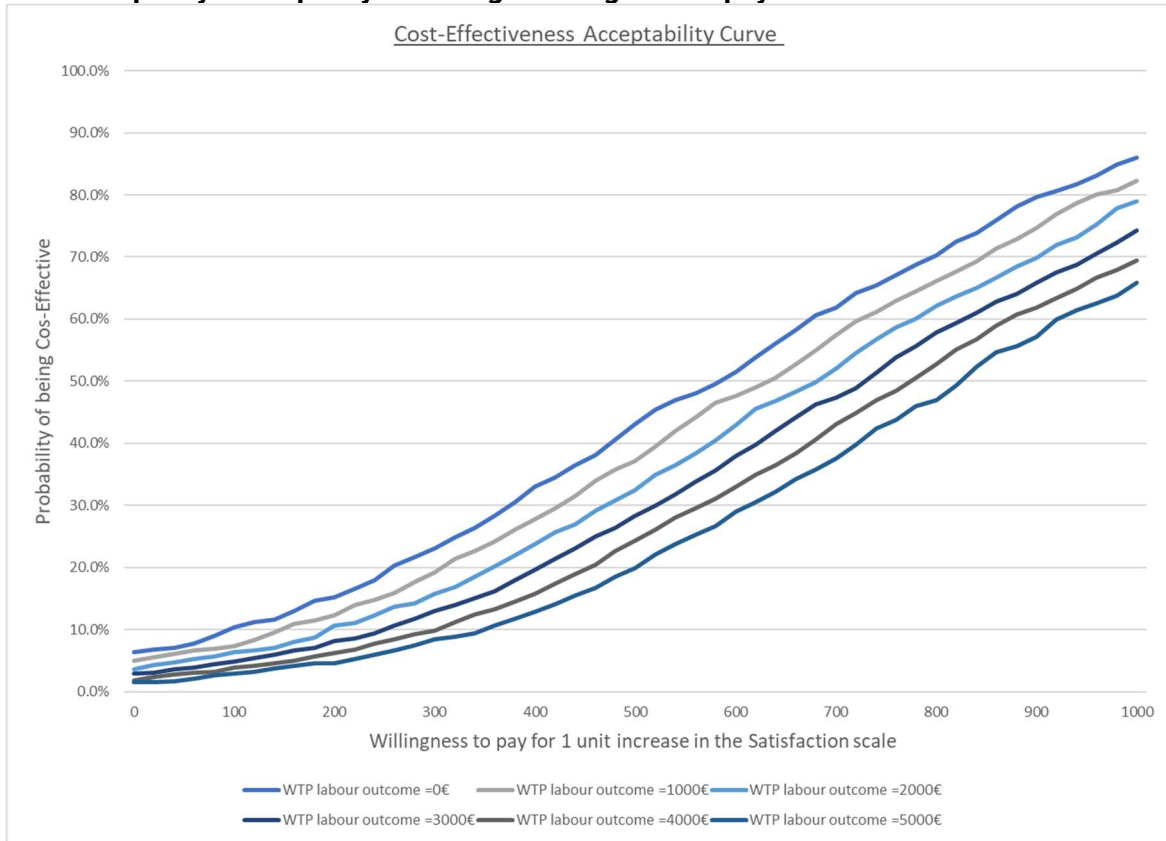
Graph 5 Cost-effectiveness acceptability curve. SMI without activation policy vs no policy

Nevertheless, this CEAC only offers a partial view of the evaluation of the programme's efficiency, because monetary valuation of the policy impact on other outcomes is not included. The following graph, again for the SMI without activation policy programme and the satisfaction with life outcome, shows a series of CEACs that have been built with the objective of surpassing, at least partially, this limitation.

The graph incorporates the effect on the probabilities of being cost-effective of adding the monetary valuation of the intervention effect on the labour outcome. As seen before, the program has a negative and statistically significant effect on labour market participation. Taking this into account, several CEACs are constructed using different valuations for this outcome, as there does not exist an established valuation for it.

Graph 6 Cost-effectiveness acceptability curve. SMI without activation policy vs no policy including a willingness to pay for labour outcomes

These CEACs have been constructed adopting the societal perspective, which is the one that should be used when prioritizing and evaluating public policies options. Nevertheless, the use of other perspectives can also be informative in the decision-making process. The graph below displays the same CEACs but adopting the City Council perspective. In this case, the monetary valuation of a 1 unit increase in the satisfaction scale must be higher than 7,600€ for the programme to have more than 50% chance of being cost-effective.

Graph 7 Cost-effectiveness acceptability curve. SMI without activation policy vs no policy. City Council perspective

Cost-Effectiveness Acceptability Curve. City Council Perspective

Y-axis: Probability of being Cos-Effective

X-axis: Willingness to pay for 1 unit increase in the Satisfaction scale

5. Discussion

The economic evaluation results presented in this report do not offer a definitive conclusion on the efficiency of the SMI welfare programme implemented by the Barcelona city council. This might be motivated by several factors, some related to the characteristics of the evaluated programme, others to the methodology adopted and finally there is the key factor of the time horizon of the analysis.

The key problem that the SMI programme wanted to improve was the poverty situation of the individuals and their related social exclusion. This situation is caused by several factors and, in turn, it effects on multiple dimensions of the individuals' life. The economic evaluation of the programme has considered this multidimensional aspect and it has analysed the intervention's impact on several socioeconomic outcomes. The selection of these outcomes was based on the theoretical key dimensions affected by a social exclusion situation; quality of life or satisfaction with life, physical and mental health, education and the situation of children who live in poor households. However, the selection of the specific outcomes was conditioned by data availability. Furthermore, these are complex dimensions that might not be properly measured by using only quantitative indicators. Summarising these caveats about the outcome's indicators used in the economic evaluation, it can be said that their analysis did collect part of the programme's impact on the key socioeconomic dimensions related to poverty and social exclusion, but it is sure they did not collect all.

A programme like the SMI intervention that has multidimensional impacts poses several challenges to an economic evaluation, specifically the method to be used. The more adequate one is the Cost-Benefit Analysis as all the intervention's impacts are aggregated into one unique indicator or measure, its monetary valuation. However, this key advantage of the CBA method is also its main utilization's barrier. Adequate data for this impact monetization is scarce and quite often incomplete as it does not include in the monetary estimations all the results' social valuation. This was the main reason that prevented the use an CBA for the economic evaluation of the SMI programme. Therefore, the method used was a combination of a cost-consequences analysis and a cost-effectiveness analysis. This method has some limitations, especially related to the interpretation of the efficiency's results that it is not straightforward and requires value judgements by decision-makers. Nevertheless, the sensitivity analysis carried out has attempted to surpass this limitation through the presentation of the cost-effectiveness results for several hypothetical monetary valuation of relevant outcomes.

In relation to the analysis time horizon, it was used a short one, 20 months. The main limitation of this time horizon is quite clear; if the policy has consequences on costs and on individuals' life that extend that period, they will not be considered

when evaluating the policy efficiency. Given the policy objectives, it is likely that this situation will take place. In the original analysis design, there was planned a complementary analysis with a long-term time horizon to overcome this limitation. This analysis would had been based on a modelling exercise that would had explored the long-term consequences of the policy. However, the impacts identified in the analysis do not have clear long-term consequences so this exercise could not be carried out.

Finally, there are two methodological issues that should be mentioned. First, as the intention to treat approach was adopted, households that did not receive the policy were analysed as if they did. It was adopted this approach to allow the analysis to benefit from the randomization process advantages. Second, the differences in the implemented policy in terms of its conditionality and on the withdrawal rate of the benefit were not considered in the economic evaluation. The number of households that were included in the pilot project does not allow the analysis to implement this level of disaggregation while keeping the analysis by policy type.

6. Conclusions

This report presents the economic evaluation results of the SMI welfare programme implemented by the Barcelona city council as part of the UIA funded BMINCOME project. The analysis provides information on the short-term programme's efficiency for three different perspectives; Barcelona City Council, Public administrations and Societal.

The results do not offer a definitive conclusion on the efficiency of the programme. However, some key messages and conclusions can be deduced from the analysis:

- There are relevant differences between the different programme's types in its implementation costs per household. The range of variation goes from less than 500€ per month for the SMI without activation type to almost 2,000€ monthly for the SMI plus training and employment policy one. This activation policy and the social entrepreneurship one are the more costly ones, with values for the total analysed period of 33,883€ and 7,618€ correspondingly.

- Based on the active participants in the programme, it seems that the programme has no effects on the regional government's costs.

- The programme seems to have no significant effect on other Barcelona City council costs. The analysis found a reduction in these costs associated to the programme, but it was small, less than 14€ per month, and it is not statistically significant.

- The economic evaluation shows that, in the short term and adopting either the City Council or the Public Administrations perspective, the cost-effectiveness results for the outcomes where statistically significant and positive policy's effects were found are quite high, implying a low cost-effectiveness of the programme.

- Even adopting the social perspective, the cost-effectiveness of the SMI programme to achieve better results in the social support, education and health dimensions is not adequate because either the programme is inefficient in absolute terms or it is in relative terms given the high ICERs found.

- The analysis shows that if the objective is to increment individuals' satisfaction with life, the SMI without activation policy is the type of intervention with better cost-effective results among the different ones implemented.

- It was also found that, adopting the societal perspective, the incremental cost to gain 1 point in the satisfaction scale with the SMI programme without activation policy vs no policy at all was 571€.

- As a result of the negative impact of the policy on the labour outcome and the positive effect on costs, the programme would be inefficient independently of the adopted perspective if this would be the only relevant outcome.

- Although it is outside of the remit of this report to establish whether this previous value is adequate in decision-making terms, the sensitivity analysis carried out offers useful information for this process, even considering in this analysis the negative effect of the policy on labour outcomes.

Finally, these findings should be interpreted with caution given the caveats about the analysis raised in the discussion part. It is of especial relevance the issue of the analysis short-term time horizon given that the programme could have medium- and long-term effects on socioeconomic dimensions.

7. Recommendations

The recommendations listed below should be confirmed with further analyses. These should be based on households' outcome and cost data to be obtain at least 3 years after the beginning of the programme.

- The SMI programmes with an activation component are not efficient based on their short-term cost-effectiveness results, and therefore their continuation or scaling-up should be questioned.

- The SMI without activation policy programme might be a cost-effective option to increase individuals' satisfaction with life based on its short-term cost-effectiveness results and adopting the societal perspective. It would depend on decision-makers monetary valuation of this outcome and on its monetary valuation of labour outcomes. Budgetary implications should be considered as well given the high cost-effectiveness results of this policy when the Barcelona city council perspective is adopted.