



## **TAKE**

### **Reducing poverty through improving take up of social policies**

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#### Reducing poverty through improving take up of social policies

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## **ABSTRACT**

**Context:** This issue of non-take up (NTU) of social rights has been a longstanding concern amongst scholars and policy makers, as it undermines the effectiveness of social policies. In the case of Belgium, only a handful of large-scale studies are available which study non-take-up from a quantitative perspective.

**Objectives:** The TAKE project, which ran from December 2015 until September 2022, has been set up to study the size of non-take-up of four income or means-tested social benefits, as well as employment subsidies, to describe the characteristics of those not taking up their social rights, to quantitatively investigate the determinants of non-take-up, and to assess the potential impact of several solutions.

**Data and methods:** TAKE has developed its own survey, which is based on a random sample of low-income households, and which combines data from administrative records and face-to-face interviews. TAKE makes ample use of microsimulation techniques. In addition, TAKE has carried out in-depth interviews, conducted focus groups, analysed administrative data and set up a large-scale field experiment.

**Conclusions:** Non-take-up of social rights is still widespread, and continues to undermine the poverty-reducing impact of social policies. Efforts for automating take-up have proven to be an effective strategy for reducing non-take-up, a strategy that should be strengthened. In addition, there is a high need for improving the monitoring of non-take-up in Belgium.

**Keywords:** Non-take-up of social rights, poverty, social policy, employment subsidies, microsimulation, survey, field experiment.

## 1. INTRODUCTION AND OBJECTIVES

Quite a few social policies and cost-compensating measures are targeted at low-income families in Belgium. Even though these measures aim at improving the living conditions of these families, policies are confronted with non-take up (NTU): not everyone who is eligible, receives the benefits they are entitled to. It is widely acknowledged that non-take-up (NTU) of public provisions is an important challenge of contemporary welfare states (Marc *et al.*, 2022). Available estimates indicate that in many Western European countries more than half of those eligible for means-tested social assistance at active age do not receive it (Bouckaert and Schokkaert, 2011; Eurofound, 2015; Fuchs *et al.*, 2020). Such high non-participation rates imply that public policies risk falling short of their objective. Non-take-up undermines the poverty-reducing capacity of the welfare state. Further, it causes unjustified disparities among those eligible (Fuchs, 2007; Hernanz *et al.*, 2004). Finally, while non-take-up saves public funds in the short run, this may not hold true in the longer run if non-take-up contributes to, for instance, delayed health care and an impoverished environment for children (Dubois and Ludwinek, 2014).

Also in Belgium, the issue of non-take-up has received attention from researchers, policy makers, and public institutes concerned with poverty, social exclusion and well-being (e.g. Bouckaert and Schokkaert, 2011; Buysse *et al.*, 2017; Nicaise and Groenez, 2004; Observatoire de la santé et du social de Bruxelles, 2017; Schols *et al.*, 2017; Steunpunt tot bestrijding van armoede bestaansonzekerheid en sociale uitsluiting, 2017). At the federal level, the improvement of take-up of social benefits was identified as one of the key pillars in the fight against poverty (Le Gouvernement fédéral belge, 2020). However, in spite of this interest, and increased efforts to study and tackle the phenomenon of non-take-up, important gaps in our knowledge of non-take-up in Belgium remain, in particular with regard to the quantification of the problem, its causes and impacts. This is in particular the case when the scope is broadened to also include wage subsidies which should stimulate low-wage employment that could also help to reduce poverty. Furthermore, relatively little quantitative evidence is available regarding the impact of existing and new measures to tackle non-take-up.

The TAKE project, which ran from December 2015 until September 2022, and was funded by Belgian Science Policy (Belspo), was set up to contribute to filling this gap. The main objective of the TAKE project was to study the size, characteristics and determinants of non-take up of policy measures targeted at vulnerable groups in Belgium. In addition, the project aimed at evaluating the impact of policy initiatives aimed at reducing non-take-up. For doing so, the project built on the latest theoretical insights, analysed existing administrative and survey data, collected new data through surveys, in-depth interviews and focus groups, and made use of both microsimulation techniques and a large-scale field experiment.

We focus on federal public policy initiatives targeted at people living in low-income families, notable social assistance for people at active age (the so-called Social Integration Allowance, SIA), social assistance for people after retirement age (the so-called Income Guarantee for Elderly people, IGE), and two additional income-tested measures for which no age-restriction applies, notably the Increased Reimbursement of health care (IR) and the Heating Allowance (HA). The latter two are

interesting because they are (at least in part) so-called ‘derived rights’ or passported benefits<sup>1</sup>: people receiving SIA or IGE nearly automatically qualify for the latter two benefits. This allows us to study to what degree non-take-up of one benefit results in non-take-up of another. In addition, we looked at non-take-up of low wage subsidies targeted at employers, a topic that is largely overlooked in the literature. All these policy measures are prone to be confronted with substantial levels of NTU. At the same time, the population targeted by these measures may face the strongest impacts of NTU on their of standard of living.

This report is structured as follows: In the next section, we present some of the project’s contributions to concepts and theory. Subsequently, we present a summary of the methodological setup of the studies carried out in this project. We pay attention to the most important forms of data collection carried out in the project, and provide some more details on the TAKEMOD model which has been used to assess eligibility of benefits, as well as the setup of the field experiment carried out in the project. Subsequently, we present our main findings. We pay attention to the size of non-take-up of the four benefits as well as the wage subsidies highlighted above, and the characteristics of those not taking up their social rights. Furthermore, we present the results of a more in-depth quantitative study into the determinants of non-take-up of the Social Integration Allowance, which makes use of our detailed questionnaire into the determinants of non-take-up, as well as our newly developed ‘Claiming Costs Scale’. Next, we present the results of two studies on two different forms of automating benefit take-up, as well as an analysis of the non-take-up of employment subsidies. In the next chapter, we summarise our key findings, formulate several recommendations for reducing non-take-up and monitoring non-take-up in the future, and conclude. The last chapters of the report include a list of publications that came out of the project, as well as a list of various dissemination and valorisation activities.

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<sup>1</sup> Please note that the meaning of these terms varies across countries. We use these terms to refer to social benefits or cost compensations for which people are eligible as a result of taking up some other benefit. For instance, people who receive the Income Guarantee for Elderly people are automatically also entitled for the Increased Reimbursement of health care. Note that eligibility does not necessarily equal take-up.



## 2. STATE OF THE ART: CONCEPTUAL AND THEORETICAL FRAMEWORK

In this section we present part of our conceptual work on non-take-up. The conceptual framework that we present here is based on Goedemé and Janssens (2020), while the theoretical framework on the determinants of non-take-up is based on Janssens and Van Mechelen (2022).

### 2.1 Conceptual framework

#### 2.1.1 Non-take-up and its link with various concepts of benefit coverage

When defining access to and (non-)take up of social benefits, it is useful to conceptually link the issue of coverage with non-take-up. To facilitate the conceptual discussion, it is useful to schematically represent the population as in the figure below.

**Figure 1. An overview of the relevant (sub)populations for defining various concepts of coverage and non-take-up**

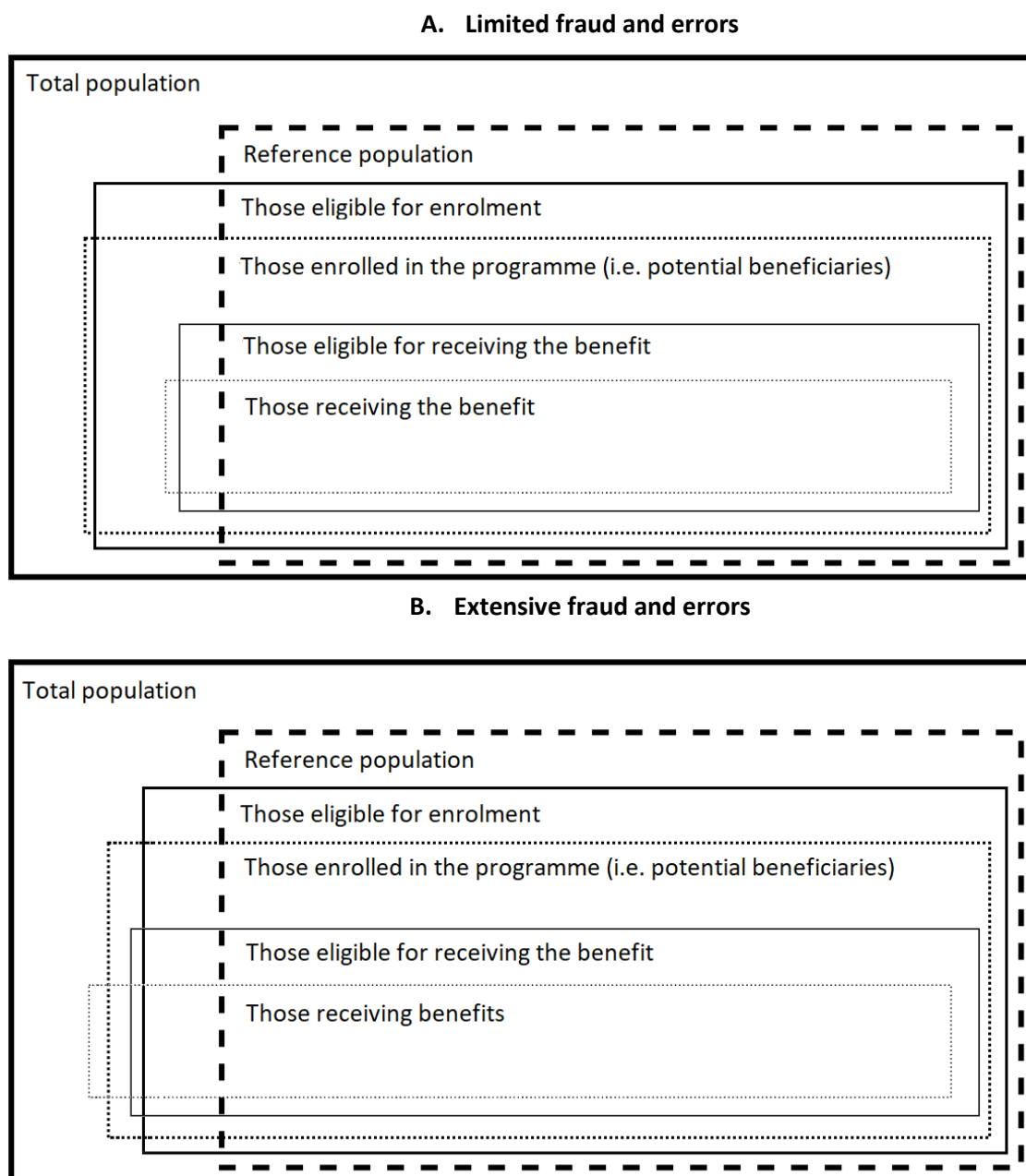


Figure 1 depicts the various subpopulations of relevance in a schematic way, with each rectangle representing a particular subpopulation. In some cases it may well be that all subpopulations are perfect subsets of each other, but for completeness we allow for imperfect targeting, administrative errors and fraud, which imply that the various subpopulations are imperfect subsets of each other. Figure 2 builds further on this representation, to illustrate the various concepts of coverage and non-take-up discussed in this section. In order not to make things overly complex, Figure 2 works with the diagram shown in panel A of Figure 1, depicting a case of ‘limited fraud and errors’, which we suppose to be the most common situation in OECD countries. However, there may also be programmes that struggle with more extensive problems of fraud and errors, resulting in people making use of services, or receiving benefits to which they are not entitled, and for which they were not enrolled. This is shown in panel B of Figure 1. An example of such a case would be a situation in which food vouchers are sold at reduced value to, and subsequently used by, persons who are not eligible for being enrolled in the programme (e.g. because of residing illegally in the country). The various concepts of coverage and non-take-up outlined in this section can be summarised as follows, and are illustrated in Figure 2<sup>2</sup>.

1. The **potential coverage rate**: the ratio of those eligible for enrolment and the total size of the reference population. The numerator preferably only contains the intersection of both. This is a concept not included in Nelson and Nieuwenhuis’ (2019) framework, but which is also of relevance for studying and understanding coverage.
2. The **effective coverage rate**, or coverage rate in short: the ratio of those enrolled in the programme (the *potential* beneficiaries) and the reference population, the numerator preferably containing only the intersection of both.
3. **The rate of non-take-up of participation, or non-enrolment**: the ratio of those eligible for enrolment but not enrolled in the programme, and those eligible for enrolment, or 1 minus those enrolled in the programme and those eligible for enrolment, with the numerator preferably only containing the intersection of both.
4. The **eligibility rate**: the ratio of those eligible for receiving the benefit and those enrolled in the programme (all potential beneficiaries). Note that in this case it is unlikely that the numerator is not a perfect subset of the denominator.
5. The rate of **tertiary non-take-up**: *Strictly defined*: 1 minus the ratio of those eligible for receiving the benefit in the reference population and the reference population, with the numerator preferably only including the intersection of both. *Broadly defined*: 1 minus the ratio of those receiving the benefit in the reference population and the reference population, with the numerator only including the intersection of both. Please note that 1 minus the rate of tertiary non-take-up broadly defined, or equivalently, the ratio of those receiving the benefit in the reference population and the reference population, is a measure of **horizontal efficiency**. **Leakage**, as a measure of **vertical efficiency**, can be defined as the ratio of those outside of the reference population receiving a benefit versus all those receiving a benefit (alternatively, this could also be defined in terms of eligibility for enrolment or eligibility for receipt rather than benefit receipt). In all these cases the reference population is typically

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<sup>2</sup> Please note that all these concepts can be computed for any reference population and to study variations between subpopulations, by restricting the population under study to the relevant reference (sub)population. Also, and especially in the case of the take-up rate, non-take-up of benefits, leakage and horizontal efficiency, these phenomena are not only studied in terms of the number of people affected, but also in terms of the volume of benefits (or total budgetary cost) which has been taken up or not received (see below).

defined in terms of having a low income or living standard, or being economically vulnerable in some other way.

6. The **take-up rate**: the ratio of the actual beneficiaries and those eligible for receiving the benefit, with the numerator preferably only containing the intersection of both.
7. **The rate of non-take-up of social benefits**: the ratio of the number eligible for receiving the social benefit, but not receiving it, and the total number of those eligible for receiving the benefit, with the numerator preferably only including the intersection of both. If computed as the mirror image of the take-up rate, one should be careful with either including ineligible beneficiaries both in the numerator and denominator of the take-up rate, or (preferably) excluding them from both the numerator and denominator. Ineligible beneficiaries are also called Type II errors or beta errors (see above).

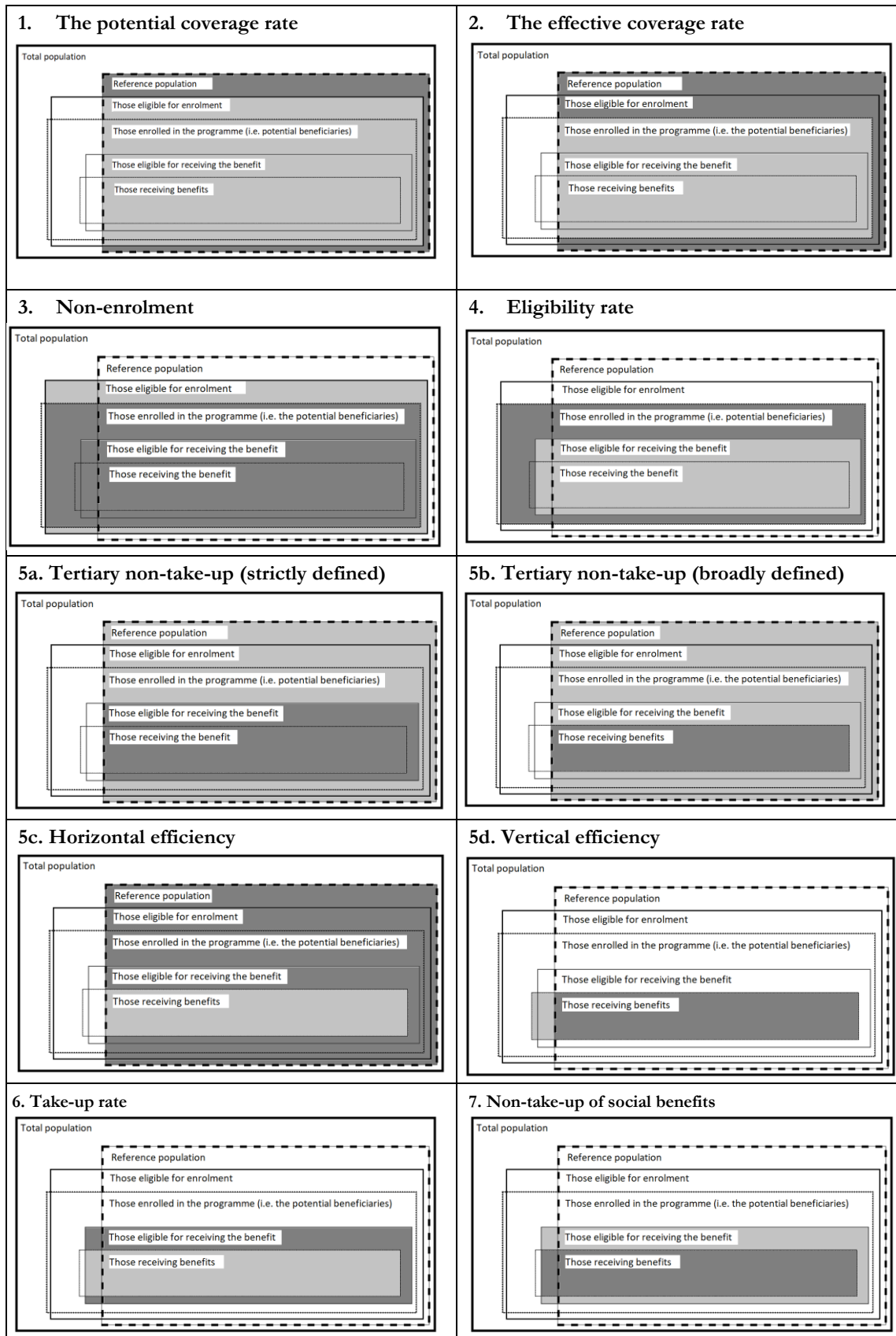
It is useful to discuss these concepts in some more detail. We can define **non-take-up of a social benefit** as a situation in which someone is eligible for, but does not receive, a (social) benefit. This is a rather strict, and well-defined situation, which corresponds to what is the usual definition in a large share of the literature on non-take-up of social protection programmes. This concept can be easily applied both to social insurance benefits (e.g. a contributory unemployment benefit), non-contributory means-tested benefits (e.g. a social assistance benefit), means-tested or non-means-tested cost compensations or cost reductions (e.g. a social tariff for utilities or a (partial) reimbursement of the cost of buying durables adapted to cope with a disability), and (targeted) services (e.g. free child care or social and medical care). The non-take-up rate is then the ratio of those who are eligible, but do not take up the benefit/service, and the total number of people who are eligible for taking up the benefit/service.

It must be noted, though, that in practice the situation is often somewhat more complex. Some people may be receiving benefits even if they are, strictly speaking, not eligible. These are so-called Type II or **beta errors** (cf. Sutherland *et al.*, 2009), which may, for instance, be due to administrative errors or fraud<sup>3</sup>. There are two consistent ways to take these 'beta errors' into account for defining and measuring the non-take-up of social benefits: (1) one minus the total number of recipients (including ineligible recipients) divided by the total number of eligible persons (including ineligible recipients); (2) one minus the total number of eligible recipients (excluding ineligible recipients) divided by the total number of eligible persons (excluding ineligible recipients) (cf. Bargain *et al.*, 2012). However, in practice it may not always be easy to implement such a consistent computation of non-take-up, leading to an over- or underestimation of non-take-up of social benefits.

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<sup>3</sup> In practical implementations of measuring non-take-up this may also include simulation errors and/or measurement error.

**Figure 2. A schematic overview of various concepts of coverage and non-take-up (the sum of the light shaded areas represents the numerator, the sum of the light shaded and dark shaded areas represents the denominator)**



In the literature on (voluntary) social insurance, notably pensions, non-take-up is often studied in relation to those who qualify for participation in a (pension) or health care programme, but – for all kinds of reasons – do not do so (e.g. Aizer, 2003, 2007; Levy and Weir, 2007; Van Gestel *et al.*, 2017). **Non-enrolment, or non-take-up of participation**, is the situation in which someone is eligible for participation or enrolment in a social programme, but ends up not being enrolled. An important difference with the non-take-up of social benefits is that with non-enrolment the financial ‘loss’ is not necessarily immediate. Furthermore, this kind of non-take-up appears more ‘upstream’ in the process of receiving benefits: without enrolment one cannot be eligible for taking up a benefit. Those not enrolled typically do not figure in statistics on the non-take-up of social benefits (as defined above). In other words, non-enrolment can also be defined as not realising a right to be part of the covered population, i.e. the pool of potential beneficiaries. The concept is most straightforward to apply to (social) insurance benefits, but could also apply to some social assistance measures which result in lower access costs for some goods or services (e.g. vouchers for cultural participation, subscriptions for cheap public transport), especially when making a distinction between being part of the programme and making actual use of the service (one may have the vouchers for cultural participation, but still not participate in cultural events; one may be enrolled in a programme of cheaper health care, but still not make use of any health care).

One way to conceive non-enrolment could be to define it as the mirror image of what Nelson and Nieuwenhuis (2019) call the ‘coverage rate’: those in the relevant reference population who do not belong to the potential beneficiaries, as a percentage of the total number of persons in the reference population (or 1 minus the coverage rate). Even though this conceptual relation with the coverage rate is useful, it is important to stress that when measuring non-enrolment and coverage, the definition of the relevant reference population will probably differ. When studying coverage, it is likely that the most useful approach is to define the reference population as the group who may be subject to the social risk that the insurance programme tries to cover (e.g. the labour force in the case of unemployment insurance, or the total population in the case of health care). In contrast, when studying non-enrolment, a different definition of the reference population is applicable, including exclusively those who are eligible for enrolling in the programme<sup>4</sup>. This definition of the reference population may be broader than the group who is subject to the social risk that the benefit tries to cover, or may include persons who are eligible for participation but do not belong to the intended target group (e.g. in Belgium, for administrative reasons asset-rich households with low current income are eligible for the Increased Reimbursement of health care, although they do not belong to the intended target group). At the same time, such a more specific definition may leave out people who face the social risk that the programme tries to cover (e.g. unemployment, retirement or sickness), but who do not qualify for participating in the programme (e.g. if they work in the informal economy or in economic sectors that organise the (occupational) social insurance scheme). Both a broad way and this more restrictive way of defining the reference population are useful for understanding social protection systems.

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<sup>4</sup> Actually, the ratio of those who are eligible for enrolling in the programme and the reference population is a concept of coverage that is not considered in the schematic overview of Nelson and Nieuwenhuis (2019), but which might be a useful addition. Note that the eligibility rate in Figure 1 refers to those eligible for taking up the benefit, which is a subset of those eligible for enrolling in the programme.

Finally, Van Mechelen and Janssens (2017a) introduced the term **tertiary non-take-up** as “a situation in which vulnerable persons are not entitled to a social provision due to eligibility rules”. This can be defined in a strict way as the ratio of the number of persons who are not eligible within the reference population (being the numerator of the fraction) and the size of the reference population (including both potential beneficiaries and those not enrolled in the programme), with the reference population being defined as those who are vulnerable (denominator of the fraction). In this sense, tertiary non-take-up is a specific form of non-coverage. We think it may be useful to also conceive tertiary non-take-up in a broader way, by including in the numerator all those who currently have no access to the benefit (or do not make use of a social service), independently of the reason for no access, including those who are eligible, but are not receiving the benefit. In whichever way defined, tertiary non-take-up is directly related to the concepts of targeting efficiency and targeting errors. More precisely, **vertical efficiency** can be defined as the extent to which leakage of transfers (or benefits in kind) occurs to the non-vulnerable population (or any other relevant definition of the reference population), while **horizontal efficiency** can be defined as the extent to which those in the reference population (e.g. those defined as vulnerable) receive the transfer or benefit in kind, in line with our broader definition of tertiary non-take-up (cf. Atkinson, 1998: 121-123).

### 2.1.2 Types of non-take-up based on the alleged reason for not receiving

While the distinction between non-take-up of benefits, non-enrolment, and tertiary non-take-up refer to different concepts of non-take-up in a broader sense, more common classifications of types of non-take-up are primarily concerned with the reasons for the non-take-up of a social benefit, as defined above. In the early 1990s, van Oorschot (1994; 1995) introduced the distinction between primary and secondary non-take-up (see also CNAF, 1996). Although the focus was on non-take-up of social benefits, we believe this distinction can also be applied to non-enrolment (the non-take-up of participation).

**Primary non-take-up**, is the situation in which a person eligible for a social security benefit does not claim his or her entitlement (whether intentionally decided or not), with the result of not receiving it. In this case, non-take-up is said to be primary, as it stems from the decision by potential beneficiaries to not claim their entitlement, or because they fail to claim their benefits due to cognitive biases and behavioural barriers (e.g. because potential beneficiaries are unaware of their eligibility, procrastinate their application, or forget about the claiming process) (Baicker *et al.*, 2012). As for now, academics and policymakers have mainly been concerned with this type of non-take-up.

In contrast, in the case of **secondary non-take-up** an eligible person starts the application process for a particular benefit but ends up not receiving it. Secondary non-take-up may result from either the behaviour of the claimant (e.g. claimants who do not complete their application due to experienced difficulties in understanding the procedure or collecting the required information, or because they experienced the treatment as degrading or intrusive) or mistakes made by the administration (Wim van Oorschot, 1994). In this way, secondary non-take-up is directly linked to the workings of the administrations and the procedures claims have to follow. Apart from difficult procedures, administrative mistakes and errors, one could also think of secondary non-take-up in the case of discretionary schemes as those cases in which people were denied benefits even though they may have received them if their case would have been handled by another person. Up until now, we only know of very few studies that explicitly study such secondary non-take-up (for an exception, see Wildeboer Schut and Hoff (2007)).

The Observatory of Non-take-up of Social rights and Public Services in France (Odenore) further refined the typology of Van Oorschot by making a distinction between lack of awareness, decision not to claim and non-receipt (Warin, 2010). **Lack of awareness** (not knowing) refers to a situation in which a potential claimant is unaware of the benefits available to him or his eligibility for them, while **decision not to claim** (not claiming) is the situation in which the potential claimant is aware of his eligibility but decides not to claim. Both of these categories fall into van Oorschot's concept of primary non-take-up. The situation of **non-receipt** occurs when the claimant is aware of his eligibility for a particular benefit and decides to claim but does not obtain the benefit, which corresponds to Van Oorschot's secondary non-take-up. In addition, Warin (2010) added a fourth situation of non-take-up i.e. **non proposition**, referring to a situation in which the provider does not propose a benefit to the potential claimant, which seems to be a reason for non-take-up that is largely under-researched (Observatoire de la santé et du social de Bruxelles, 2017).

### 2.1.3 Types of non-take-up based on the extent and duration of non-take-up

Apart from distinguishing between different types of non-take-up based on the alleged reason for not receiving the benefits one is entitled to, other classifications exist that are based on the extent or duration of non-take-up. For example van Oorschot (1994; 1995) makes a distinction between total non-take-up and partial non-take-up. **Total non-take-up** is the situation in which a potential beneficiary does not receive a benefit at all, whereas, **partial non-take-up** corresponds to a situation where an eligible person only receives part of the benefit he or she is entitled to. Whereas total non-take-up can occur in both a situation of primary non-take-up (i.e. an eligible person will not be granted any allowance because he does not apply for it) and secondary non-take-up (e.g. a person will not be granted any allowance because his claim is erroneously rejected), partial non-take-up only occurs in a situation of secondary non-take-up as it originates from either insufficient or inaccurate information provided by the claimant or evaluation errors made by the administration, only after an eligible person filed a claim. To the best of our knowledge, very few studies have explicitly paid attention to the extent of partial non-take-up, with the study of Berthoud (1983) on unmet entitlements among claimants of the British Supplementary Benefit (SB) as a notable exception.

Finally, we would like to stress the importance of the time dimension in the classification and analysis of non-take-up. van Oorschot (1994; 1995) distinguishes between three types of non-take-up in relation to time: permanent non-take-up, delayed (or temporary) non-take-up and frictional non-take-up. **Permanent non-take-up** is the situation in which a person does not successfully claim his benefit in the period between becoming eligible for the benefit and the time she is no longer eligible. In the situation of **temporary non-take-up**, the person does successfully apply for the benefit but only after some time of becoming eligible. This delay in claiming can either be situated in the period between becoming eligible and deciding to claim or in the period between the decision to claim and actually submitting a claim (Wim van Oorschot, 1994). While in some cases temporary non-take-up is 'reduced' by retroactively providing benefits, this is far from always the case. These distinctions also apply to non-enrolment. Research into behavioural economics has brought forward different reasons for a delay in claiming benefits and enrolment into social insurance schemes. This strand of literature has pointed to the importance of behavioural barriers to decide and act optimally with regard to the application for benefits or programmes (Baicker *et al.*, 2012; Rice, 2013; Van Winssen *et al.*, 2016). For example, a delay in the decision to claim may result from people not being perfectly aware of the costs and benefits associated with filing a claim for a particular benefit. But also, even when a person has

made the decision to file a claim, a delay in claiming can result from people failing to act in accordance with their decisions because of procrastination behaviour, risk aversion etc. Studies (Coile *et al.*, 2002; Maurer and Mitchell, 2016) that have focused on temporary or delayed non-take-up found that non-take-up is often an issue of delays in claiming.

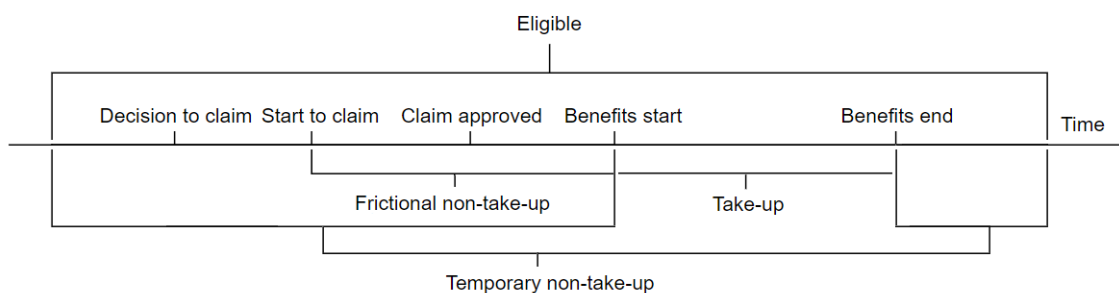
Finally, Wim van Oorschot (1994) points to a distinction between temporary and frictional non-take-up. We can define **frictional non-take-up** as the time between starting the application procedure and receiving the benefit<sup>5</sup>. It may result from the claimant needing time to fill in an application form and gather the necessary documents, but may also result from the time administrators need to assess the application and award the benefit to the claimant (Wim van Oorschot, 1994). While this distinction seems very useful to us, it may also be relevant to use a concept of temporary non-take-up that is defined more broadly, as the period between becoming eligible and actual receipt of the benefit, regardless of when a claim was filed, and define frictional non-take-up as a part of this period (i.e. from the moment at which the claiming process is started). Finally, it is well worth mentioning that temporary non-take-up may also happen when benefits are stopped being paid too soon, either (1) due to an administrative error; and/or because (2) beneficiaries do not comply or are unable to comply with administrative procedures which require to update information or refiling a claim after a certain period of receiving the benefit. Please note that as soon as beneficiaries have started their application for continuing the benefit, this period includes again frictional non-take-up.

Figure 3 illustrates temporary non-take-up, with frictional non-take-up as a subperiod of temporary non-take-up (i.e. different from van Oorschot's original definition), and also counting in the possibility that benefit receipt is ended prematurely. Note that if benefits are assigned retroactively, the starting point (in time) for receiving benefits does not change, but beneficiaries will receive a higher amount of benefits at some point in time, often as a lump sum, to cover partially or entirely the volume of benefits that would apply to the period between the start of eligibility and the first spell for which benefits are paid. While in that case the first period in which no benefits were received may still count as temporary non-take-up (depending also on the purpose of the exercise), the measurement of temporary non-take-up in terms of the total volume of benefits not taken up should be different, and take account of the additional amount paid to cover retroactively a preceding period of eligibility.

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<sup>5</sup> Please note that in the examples given by van Oorschot (1994) frictional take up might start already once someone has decided to claim, rather than when the application procedure is started. However, we believe it is useful to restrict it to when the application procedure is started. Also note that there is some overlap with temporary non-take-up, as both types of non-take-up cover the period between starting the application procedure and submitting the claim.



**Figure 3. A timeline of temporary non-take-up (broadly defined)**

Notes: Strictly speaking, Wim van Oorschot (1994) defines temporary non-take-up as the period between the start of eligibility and (successfully) submitting a claim. The last period of temporary non-take-up may also include a new period of frictional non-take-up.

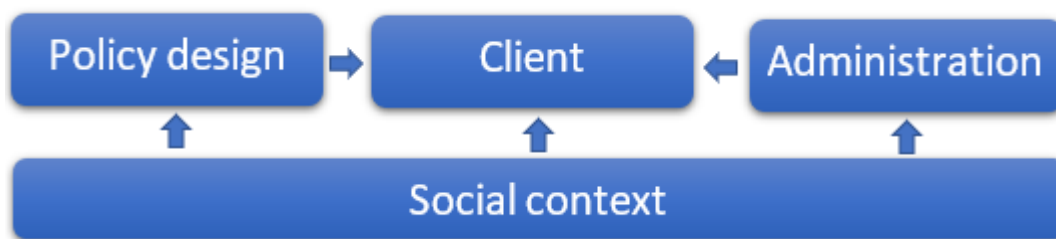
To sum things up, researchers and policymakers have focused primarily on the primary non-take-up of social benefits. In practice, measurements of non-take-up may conflate temporary and permanent non-take-up if they assess the degree of non-take-up at one moment in time, and conflate partial and full non-take-up, mainly due to data limitations, and the uncertainties surrounding measurement and simulation errors (see below). Therefore, more research which is able to distinguish all these different types of non-take-up would be very welcome, including on secondary non-take-up, about which there is still much to learn. In this section we have tried to highlight the many different ways in which non-take-up can be conceived. It goes without saying that similar concepts can be measured in various ways, and it is always necessary to adjust definitions and measurements to the exact purpose of the analysis. However, we hope that the conceptual framework set out in this section, will be helpful not only to identify the relevant dimensions of non-take-up, but also to define more precisely which concept of non-take-up is actually measured. As we will explain further below, unfortunately, in the TAKE survey we were not able to measure all these various concepts or dimensions of non-take-up.

## 2.2 The determinants and drivers of non-take-up<sup>6</sup>

Given its comprehensiveness, we adopt the multi-level framework as presented by Wim van Oorschot (1996), and complement it with insights from behavioural economics and more recent empirical research on non-take-up. Van Oorschot classifies factors affecting take-up at three levels: at the client level, at the level of the administration and at the level of the policy design. In comparison with van Oorschot we present a framework that is not so much focused on the different stages involved in the process of non-take-up, but rather on the multitude of obstacles that deter eligible individuals from applying for benefits and the role herein of policy regulation and administration. Based on a large body of empirical evidence, we identify and incorporate in our model the characteristics at the level of the administration and policy design that may impact on individual take-up behaviour. In addition, we add a fourth level to the model: the broader social context which we believe to impact on the other three levels in our model. The different levels are schematically presented in Figure 4. In the following sections, we will subsequently focus on drivers related to the client's behaviour, policy design, administration and broader social context.

<sup>6</sup> This section contains slightly edited excerpts of Janssens and Van Mechelen (2022).

**Figure 4. The various levels influencing non-take-up**

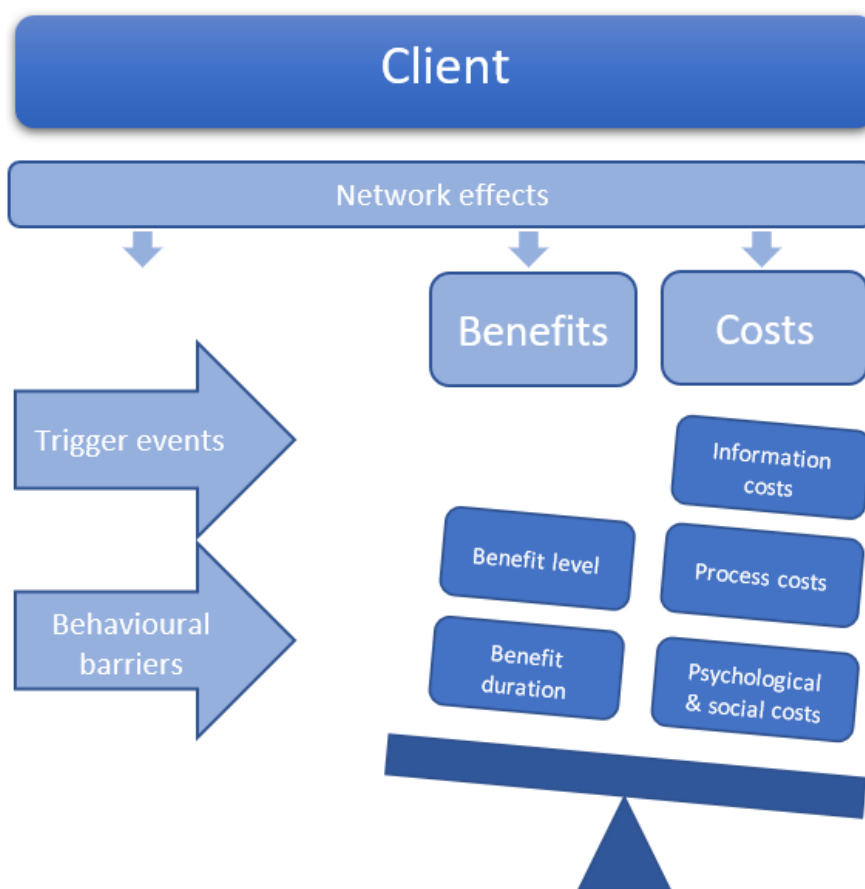


Source: Janssens and Van Mechelen (2022).

### 2.2.1 The client level

According to the traditional approach, the decision to take-up benefits is the result of balancing costs and benefits associated with claiming. The standard practice is to distinguish between information costs, process costs and psychological and social costs (see below) (Hernanz *et al.*, 2004: 18). As shown in Figure 5, we add three important elements to this trade-off idea. First, we take account of biases, misperceptions and other behavioural barriers that may affect take-up behaviour. Also, we include trigger events, as introduced by Wim van Oorschot (1991: 23), that may induce people to put in a claim. Finally, we draw attention to the existence of network effects in the utilisation of public provisions. All factors affecting the client level are graphically presented in Figure 5 below.

**Figure 5. Determining factors at the client level**



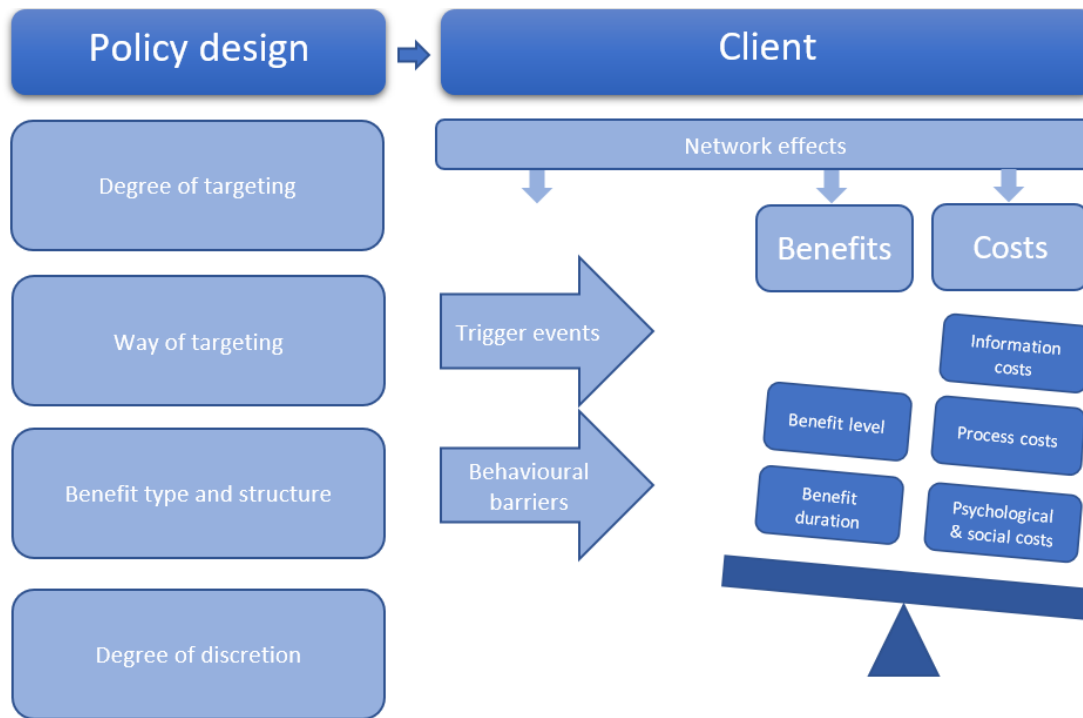
Source: Janssens and Van Mechelen (2022).

While it would lead too far to discuss all the factors that are relevant at the client level, let us focus here on information costs, process costs and psychological and social costs which will be analysed empirically in this report, and which are often not clearly defined. The trade-off idea which states that clients make a trade-off between costs and benefits, assumes that the incentives to participate are balanced against the costs. The costs associated with claiming are commonly grouped into three main categories: information costs, process costs, and social and psychological costs. **Information costs** can be defined as the expected, perceived and experienced time and effort that people have to invest in gathering the information on the existence of public provisions, the eligibility criteria, the claiming process and its consequences. In contrast, **process costs** refer to the expected, perceived and experienced time, money and energy spent in the claiming process itself (Janssens *et al.*, 2021: 2-3). Process costs relate to the physical and administrative thresholds individuals may encounter in applying for a social programme, including difficulties with filling in forms, travelling costs and queuing. A third category of costs includes the **psychological and social costs** relating to the take-up of public provisions, thereby focusing mainly on stigma costs. **Stigma** relating to the take-up of public provisions can arise from the claimant's own feeling that claiming benefits conveys a devalued identity ('personal stigma'), the perception that other people will devalue your identity ('stigmatisation') and the feeling or perception that people are not treated with respect by administrative officials during the claims process ('claims stigma') (Baumberg, 2016: 183). In addition, the design and implementation of public programmes and the broader social context in which one lives, may affect the degree of stigma as well.

### 2.2.2 Policy design

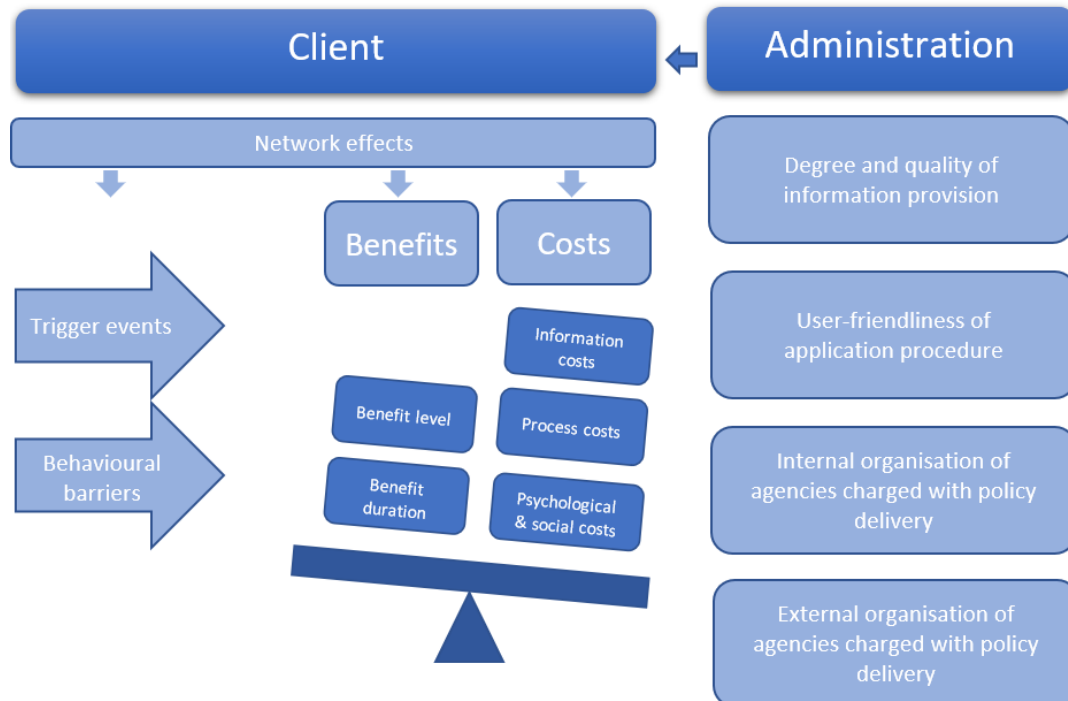
So far, we have focused on factors directly related to the client level. However, the policy design and the structure and functioning of the administration are also relevant. At the level of policy design, eligibility rules and entitlement conditions are set up and the benefit structure (e.g. the level of the benefit or the frequency at which benefits are paid) is defined. Furthermore, policy design determines the relative importance of various social programmes, for instance of social insurances versus social assistance schemes. Moreover, policy-makers decide on the size of the budget that is assigned to the benefits and services provided, as well as to the administration of the public programme. In this way the policy level defines the context in which the behaviour of both clients and administrative officials take place, thereby potentially setting up or tearing down important barriers to programme participation (Bell and Smith, 2022). Figure 6 focuses on the impact of the policy design on non-take-up behaviour at the client level, either through the way it affects the costs and incentives that potential claimants may take into account, or because policy instruments in part create the conditions within which behavioural barriers, trigger events and network effects are more or less likely to occur.

**Figure 6. Determining factors at the policy level**



Source: Janssens and Van Mechelen (2022).

**Figure 7. Determining factors at the administrative level**



Source: Janssens and Van Mechelen (2022).

### 2.2.3 Administration

While policy design has an important impact on administration, it is worthwhile highlighting the specific impacts administrative and the organisational set-up of public programmes may have on non-take-up. This is not only because administrations may provide more or less room for erroneous rejections of applications by administrators, but also because administrative features may lay additional thresholds on potential claimants' paths towards take-up (Rik Peeters, 2020). In Figure 7 we distinguish between four elements at the administrative level through which the administration may affect non-take-up: (1) the degree and quality of information provision; (2) the user-friendliness of the application procedure; (3) the internal organisation of agencies charged with policy delivery; (4) the external organisation of agencies charged with policy delivery.

### 2.2.4 The social context

A final factor that we want to draw attention to, but which is broadly missing from the literature on non-take-up (with Eurofound (2015) being a notable exception), is the importance of the broader social, technological and legal context. Clients, administrations and policymakers are embedded in a broader social and legal context including the prevailing institutional and policy background, labour market conditions, the media landscape and profile of the population in need of support. Policymakers and researchers interested in non-take-up should carefully consider these broader contexts as they can shape important individual determinants and/or facilitators or inhibitors of (non-)take-up behaviour. In comparison with the other levels in our framework, there is relatively little empirical research on the relationship between factors at the broader social and legal context and individual non-take-up outcomes. This lacuna is unfortunate but can at least be explained by the fact that it is very difficult to investigate this relation with single-country data. Also, the broader context in which individuals find themselves changes over time and is relatively dynamic in nature. In particular, changes in the broader social and legal context occur in response to the prevalence of new social problems, advancing technologies, available social resources, and community preferences and demands.

## 2.3 Conclusion

When measuring non-take-up and related concepts of benefit access, it is important to keep in mind that various dimensions are important, and people tend to define and measure non-take-up in varying ways. That is why in the following sections we explain our approach in a relatively detailed way. As will become clear, unfortunately we were not able to measure all relevant dimensions and conceptualisations of non-take-up within the timespan of the project. Furthermore, we presented a broad overview of the various factors contributing to non-take-up, both in the study of non-take-up, the public debate about this topic, and in relation to policy design, it is important to keep in mind that a broad range of factors are at play. While measuring the relative importance of all these factors is hardly possible, within the TAKE project we have tried to set some steps forward, not least with regard to measuring information costs and process costs in a much more direct way than is usually done in the literature. Furthermore, by breaking down total non-take-up rates, analysing administrative data and setting up a field experiment, we have looked at how various elements of policy design and administration affect the level of take-up and non-take-up of social benefits.

### 3. METHODOLOGY

In this section, we describe the data and methods we used to answer the research questions of our project.

#### 3.1. TAKE\_ISSOC

As partner in the TAKE project, the Federal Public Service for Social Security gathered detailed information on eligibility conditions of several means-tested benefits in Belgium in a structured database (**the TAKE\_ISSOC database**) that allows for easy comparison of the different benefits and interventions (for a detailed discussion, see Van Mechelen and Van der Heyden (2017) and Van der Heyden and Van Mechelen (2017)). The following benefits/interventions have been analysed thoroughly: IT/AI, IVT/ARR, THAB/APA, Leefloon/Revenu d'Intégration Sociale, IGO/GRAPA, VT/IM and verwarmingstoelage/Allocation de chauffage. We investigated how the respective means tests are programmed by law, and how they are implemented in practice. More information on their implementation in practice, including with regard to the data flows that they used, was collected directly from the relevant institutions through a written questionnaire and face-to-face interviews with experts in the relevant administrations. Besides the income-related criteria we also examined the eligibility conditions other than those related to income. For each benefit/intervention we also analysed crucial household-related factors: who is considered to be a part of the household? Who is considered as the partner of the potential beneficiary? Whose income, other than that of the claimant, is taken into account? Can other household members also benefit from a certain benefit or measure? In addition, TAKE\_ISSOC also contains information on actions undertaken by the relevant administrations to monitor and reduce non-take-up, in particular by automating benefit access.

#### 3.2. TAKE Survey

An important part of the TAKE project, is the organization of a new representative survey, which is expressly tailored to the needs of making an integrated in-depth study of the size, characteristics, causes and consequences of NTU of policy measures targeted at low-income households. In what follows, we subsequently describe: 1) the sample design and TAKE sample; 2) the TAKE questionnaire; 3) the fieldwork; and 4) the development of the TAKE dataset. For a more elaborate discussion of the various approaches to measuring non-take-up, we refer to Goedemé and Janssens (2020).

##### 3.2.1. The target population, sample design and TAKE sample<sup>7</sup>

###### *3.2.1.1 Target population and sampling frame*

###### **Definition**

The target population of our study consists of the 2019 population that is eligible for the income guarantee for the elderly or the social integration allowance (SIA), living in private households in Belgium<sup>8</sup>. For practical reasons, people living in one of nine German-speaking municipalities are

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<sup>7</sup> An elaborate discussion of the TAKE sample design and its implementation in practice, can be found in Goedemé (2022).

<sup>8</sup> When designing the sample, our main focus was on measuring non-take-up in 2018, but delays in the project timeline made it more relevant to use the data for measuring non-take-up in 2019.

excluded (to facilitate the fieldwork of the survey), and for privacy reasons we also exclude the inhabitants of Herstappe, the smallest municipality in Belgium.

### **Practical implementation: identification of four target subpopulations**

Given limited resources, we could not start from a sample of the general population and then focus on those in the sample who were eligible for the benefits under study, as we would then require a sample that was too large for the available budget. In contrast, we had to find a sampling register that allowed us to identify the target population with a sufficient degree of precision, minimizing the inclusion of those who are not eligible for any of these benefits, while also avoiding the exclusion of potentially eligible households. This could only be achieved by combining several registers, which hitherto, to the best of our knowledge, were never combined to define a sampling frame in Belgium.

The target population consists of those who are eligible for and do receive a benefit of interest, and those who are potentially eligible for, but do not receive a benefit of interest. Those who are eligible and receive a benefit can be identified rather easily, under the assumption that administrative errors and fraud are negligible (i.e. we assume that only eligible people receive benefits). Eligibility of those who do not receive a benefit can only be assessed by combining in a complex way many variables. At this moment this is not feasible for the entire population, so a proxy must be used. We created such a proxy, which was primarily inspired by income thresholds for SIA and IGE benefits and observation on the basis of older data about the take-up rate by income category. In what follows we explain the delineation of the four target subpopulations of interest and the practical implementation to create the sampling frame for the TAKE sample.

The basis of the sample frame consists of the population as officially registered in the National population register on 31<sup>st</sup> December 2017. This register includes the so-called Register of Foreigners and the Waiting Register, the latter of which also includes refugees with undetermined status. Households are assumed to consist of those people who are registered on the same address, except for people living in institutions (e.g. psychiatric hospitals, prisons, convents; not sampled), or with an official address at a Public Centre for Social Welfare (OCMW or CPAS), who are considered separate single-person households. The sample selection took place in June 2019, implying that by then the National register for 31<sup>st</sup> December 2017 must have been largely consolidated. Apart from excluding households registered in any of the German-speaking municipalities and Herstappe, another selection consisted of excluding all households without any member with a record in the tax register (IPCAL) for tax year 2018 (incomes 2017), the most recent available at the time of selection<sup>9</sup>.

First, we split the population officially living in Belgium into two groups: those with all household members born after 31<sup>st</sup> December 1953 (i.e. no-one eligible for IGE in 2018) (Group 1); and those with at least one person born on 31<sup>st</sup> December 1953 or before (i.e. at least one person potentially eligible for IGE in 2018, which was the initial target year at the start of the TAKE project) (Group 2).

Group 1 (the ‘young’) was further split into two groups. Subpopulation 1, or **YOUNG-SA**, consists of those households with at least one person receiving social assistance on 31<sup>st</sup> December 2017. Importantly, social assistance in this case refers exclusively to the ‘social integration allowance’ (SIA),

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<sup>9</sup> Within the municipalities selected for the TAKE sample (see below) about 15% of households have been excluded from the YOUNG-NOSA on the basis of this criterion, and less than 2% from OLD-NOIGE (Correspondence with CBSS, 8/11/2021). The excluded households can be expected to be a mixture of very vulnerable and well-to-do households (Communication with Annelies De Schrijver, STATBEL).

and excludes the ‘equivalent social integration allowance’ as a sufficient condition for inclusion in YOUNG-SA. Due to administrative errors, there are people who appear with multiple records in the CBSS / POD MI registers. It was our intention that YOUNG-SA would consist of all household who receive the Social Integration Allowance (SIA) or the ‘equivalent SIA’. Instead, when selecting the sample, the CBSS defined YOUNG-SA as all households with at least one person with at least one record which indicates receipt of the social integration allowance on 31<sup>st</sup> December 2017 without indicating an individualised project for social integration (GPMI)<sup>10</sup>. Households with people who exclusively have records that indicate both receipt of the social integration allowance and GPMI on 31<sup>st</sup> December 2017 are not included in YOUNG-SA. People who have some form of social assistance, but no ‘social integration allowance’, do not count for inclusion in YOUNG-SA, while having some other form of social assistance in combination with a social integration allowance is no reason for not being included: the defining criterion is having a record in the register of receipt of the social integration allowance without GPMI<sup>11</sup>.

Similarly, Group 2 (households with at least one member born on or before 31<sup>st</sup> December 1953), was also split into two groups. Subpopulation 2, or **OLD-IGE**, consists of households with at least one member who received either the income guarantee for elderly people (IGE).

Of the remaining households of Group 1, only those with an equivalent net taxable income below 7,000 EUR were retained. Households that consisted exclusively of one or more people born after 31<sup>st</sup> December 1999 were also excluded (i.e. those who had not been 18 for at least one full year in 2018). To compute equivalent income, net taxable income (IPCAL variable A/B 7555, tax year 2018 (incomes 2017)) of all household members born before 1<sup>st</sup> January 1999 was added up. A missing value was considered to be equal to zero taxable income. Subsequently, for each household the number of adult household members was counted (i.e. those born before 1<sup>st</sup> of January 1999). Equivalent taxable income is equal to net taxable income divided by  $1 + 0.5 * (\text{number of adults} - 1)$ . Households with an equivalised net taxable income below 7,000 EUR constitute Subpopulation 3, or **YOUNG-NOSA**. The other households of Group 1 are outside the target population and were excluded from the sampling frame.

To capture all those eligible for IGE, a more generous threshold was used. Of the remaining households of Group 2, first the household members born on or before 1<sup>st</sup> January 1954 were identified. Next, net taxable income of (only) these household members was aggregated at the household level (IPCAL variable A/B 7555, tax year 2018 (incomes 2017)). This amount was then divided by the number of household members born on or before 1<sup>st</sup> January 1954. Households for which the resulting amount was below 14,000 EUR constitute Subpopulation 4, or **OLD-NOIGE**.

### Domains

From each of these four target subpopulations, a random sample of households was selected without replacement (for details, see below). Given the varying income criteria that are applicable to YOUNG-NOSA as compared to OLD-NOIGE, as well as the lack of an income threshold for selecting YOUNG-SA

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<sup>10</sup> This is the result of some misunderstanding: we were informed about this specific delineation by the Crossroads Bank for Social Security when the fieldwork had already started.

<sup>11</sup> Please note that These households remain eligible for inclusion in YOUNG-NOSA, provided they meet the income criterion (which is very likely). In the sample, 14% of households in this group received SA combined with GPMI on 31/12/2017.



and YOUNG-IGE, for many types of analysis the samples of the four target populations cannot be simply put together. For instance, IGE can be studied by putting together the samples relating to the OLD-IGE and OLD-NOIGE target populations, only after filtering out those households of the OLD-IGE sample with an income above the OLD-NOIGE threshold. Therefore, it is important to identify groups from all four target subpopulations that allow for a consistent measurement of non-take-up. In a simple world, this could be done by applying the same income thresholds to the YOUNG-SA and OLD-IGE populations as to those applied to the YOUNG-NOSA and OLD-NOIGE populations. However, in practice the issue is somewhat more complicated, and depends on the purpose of the analysis. This is because while SIA is not taxable (and does not appear in net taxable income), support provided in the form of subsidised employment is taxable (in the same way as wages are). Furthermore, in contrast to SIA, IGE is a taxable benefit, and should be included in net taxable income. Depending on the purpose of the analysis, this implies that various ‘domains’ must be identified which combine people from the four target subpopulations which are comparable with respect to the maximum level of income they have.

Therefore, we defined four domains: (1) one domain to measure non-take-up of SIA among the population aged 18-64, by restricting the target population to this age group, and by applying the YOUNG-NOSA threshold to the other three subpopulations (with the caveat that subsidised employment is taxable, and may have led to the exclusion of some take-up); (2) one domain to measure non-take-up of IR and the Heating allowance among the population aged 18-64, by restricting the target population to this age group, and by applying the YOUNG-NOSA threshold to the other three subpopulations while treating income from SIA as taxable income; (3) one domain to measure non-take-up of IGE among those aged 65 and over, by restricting the target population to this age group, and by applying the OLD-NOIGE threshold on the OLD-IGE subpopulation, while excluding any income received from IGE from taxable income (otherwise take-up of IGE would be overestimated); (4) one domain to measure non-take-up of IR and the heating allowance among the population aged 65 and over, by restricting the target population to this age group, and by applying the OLD-NOIGE threshold on the OLD-IGE subpopulation (with income from IGE included in taxable income, the default).

### **The TAKE target population vs. Belgium’s total population**

The definition and practical implementation of the four domains have two important implications when interpreting the estimates based on the TAKE survey. First of all, it should be clear that estimated take-up rates are not directly comparable across the four domains. For instance, we are not in a position to say that non-take-up of IGE is higher than non-take-up of SIA. Similarly, results for those at active age are not comparable for those aged 65 and over. Second, the TAKE survey cannot be used to estimate the total size of non-take-up, as there are people with incomes above the thresholds for identifying the YOUNG-NOSA and OLD-NOIGE target populations who are eligible for the benefits under study. This implies that the absolute number of people confronted with non-take-up is most likely a (considerable) underestimation of the total number confronted with non-take-up in the total population of Belgium. In contrast, with respect to the estimated non-take-up rate, it is hard to predict how this would differ in the total population compared to the TAKE target population.

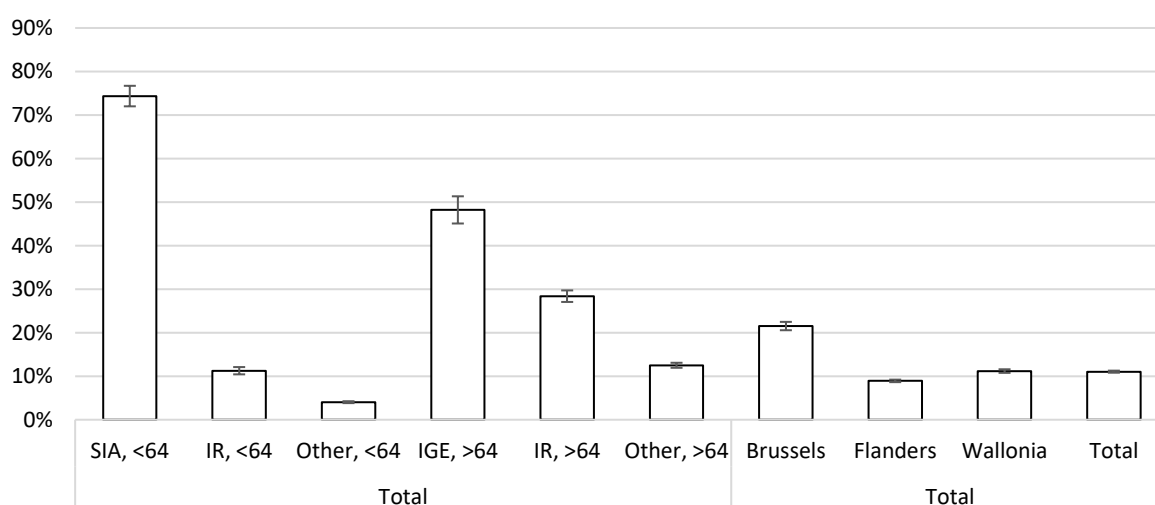
To gain some more insight into the difference between the TAKE target population and Belgium’s total population, we requested a separate, much bigger, sample from CBSS. The TAKE\_Totals sample is a

1.131% simple random sample (without replacement) of the population of Belgium in 2017, 2018 and 2019, stratified by Region, cross-classified with the following six categories:

1. Households without anyone aged 64 or over, with at least one household member receiving SIA or equivalent SIA on 31<sup>st</sup> December.
2. Households without anyone aged 64 or over, without SIA or equivalent SIA, but with at least one household member receiving IR on 31<sup>st</sup> December.
3. Households without anyone aged 64 or over, without SIA, equivalent SIA or IR on 31<sup>st</sup> December.
4. Households with at least one person aged 64 or old, with at least one member receiving IGE on 31<sup>st</sup> December.
5. Households with at least one person aged 64 or old, without anyone receiving IGE, but at least one member receiving IR on 31<sup>st</sup> December.
6. Households with at least one person aged 64 or old, without IGE or IR on 31<sup>st</sup> December.

For this sample, we received for each municipality information on the total size of all 6 categories mentioned above, before and after the application of the income threshold used for measuring SIA among those between 18 and 64 years (domain 1), and for measuring IR and the heating allowance among the 65 plus population (domain 4). This allowed us to gain some insight into the share of the TAKE target population in the total population of Belgium. As the graph below shows, taken together, the TAKE target population such defined, covers about 11% of the total population of households in Belgium in 2019. The domains cover a larger share of the total population in Brussels, and a larger share of the population consisting of households with some aged at least 64 in 2017. The graph also clearly shows that the TAKE target population covers only part of the total population eligible for the benefits under study, implying that estimated non-take-up rates cannot be generalized to the total population, while the absolute number of people not taking up social benefits will be (relatively strongly) underestimated.

**Figure 8. Percentage of households with an income below the TAKE income threshold (domain 1 and domain 4), 2019**



Note: 95% Confidence intervals (ignoring a finite population correction). German-speaking communities and Herstappe excluded. Source: TAKE\_Totals (CBSS), own computations.

### 3.2.1.2 The inclusion of household members

The selection of households was carried out by including only one person per household in the sampling frame: the household reference person. Single-person households only consist of the reference person. Administrations do not apply specific rules to assign reference person status to a specific household member. The National Register asserts that ‘common sense’ must be used when selecting a reference person for the household. Usually this implies that the reference person is any one of the partners of a married or unmarried couple, any of the parents in the household, or the person who generates or claims social security or social assistance rights. There are no material benefits associated with being a household reference person<sup>12</sup>. We ‘followed’ the selected person throughout 2017, 2018 and 2019, as well as anyone who was a household member of the selected person either on 31<sup>st</sup> December in 2017, 2018 or 2019. Because fiscal register data become available with too much delay, it was practically infeasible to draw refresher samples for 2018 and 2019.

### 3.2.1.3 Coverage gaps, errors and bias

Given that the overall aim of the TAKE survey is to study non-take-up, an important limitation of our definition of the target population is that people registered in institutions or other collective households on 31<sup>st</sup> December 2017 were excluded. In contrast, selected people remain in the sample if they moved into a collective household in 2018 or 2019. There are only a few studies that shed some light on this issue of poverty and take-up of people living in collective households (Hans Peeters *et al.*, 2013).

The National Register is not complete, and is not always up to date. First of all, there may be a time lag between the moment that people are registered on their new address when they form a new household, or move out of an existing household. In contrast, for assessing eligibility of, for instance, SIA the factual situation is relevant, not the official one. For the same reason, there may be ‘over-coverage’ of households that do no longer live in Belgium, and ‘under-coverage’ of households that recently moved to Belgium. Although people without a fixed address and the homeless strictly speaking can usually register themselves with a Public Centre for Social Welfare as their address, some vulnerable groups are out of scope of the National Register. Given that benefit eligibility is typically dependent on having an official address, illegal residents and others without an official address are not part of the target population, strictly speaking, but they might be eligible if only that condition would be fulfilled. Nicaise *et al.* (2019) report on one of the few studies into the socio-economic profile of groups missing from the National Register or underrepresented in surveys.

The exclusion of households without any record in the tax register may be a source of concern in terms of under-coverage as well. An analysis of EU-SILC (2009-2014) matched with IPCAL has shown that only in very exceptional cases no IPCAL record is available for those registered in the National register (De Schrijver, 2020), but it can be expected that at least part of those for whom no IPCAL record was available, belong to the vulnerable population, including some SIA beneficiaries. This may have a decreasing effect on estimated non-take-up of SIA. The impact of these omissions on estimates of non-take-up of IGE can be expected to be very slim. For non-take-up of the increased reimbursement and the heating allowance the bias is less predictable, and probably somewhere in between these two. However, it is possible that the implications for the estimated profile of non-take-up may be

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<sup>12</sup> <https://www.ibz.rrn.fgov.be/nl/rijksregister/faq/wat-is-het-rijksregister-van-de-natuurlijke-personen/> (last accessed 12/10/2021).

somewhat more outspoken, as it can be expected that the profile of those without a record in IPCAL is quite different (on average) from those with a record in IPCAL.

In addition, when analysing 2018 and 2019 data, it must be kept in mind that people who migrated to Belgium after 31<sup>st</sup> December 2017 have not been included (e.g. with a refresher sample). Similarly, households consisting of young people who just met the age threshold in 2018 or 2019 are not included.

Finally, specific exclusion criteria apply for Sample B (i.e. the sample for which we have data from face-to-face interviews). These exclusion criteria are explained in section 3.7. The exclusion of households with recent migrants may be a further source of under-coverage that should be taken into account when interpreting the results.

#### 3.2.1.4 Sample design, invitations, and sample size

A simple random sample of those included in the sampling frame was not feasible for budgetary reasons. Instead, the sample design of the TAKE sample follows a two-stage selection with probabilities proportional to the estimated size (PPES) (see for instance Kalton, 1983: 42-47). At the first stage, 46 groups of municipalities were selected without replacement, consisting of a total of 90 municipalities stratified by province and Region (13 in Brussels-Capital Region, 26 in Wallonia and 51 in Flanders). This ensured a good geographical coverage of the country. The largest municipalities were included as a separate stratum (i.e. so-called self-representing primary sampling units), while municipalities of sufficient size formed their own group (or primary sampling unit). At the second stage, the Crossroads Bank for Social Security (CBSS) selected a pre-defined number of households without replacement and independently in each selected PSU, separately for each target subpopulation. In total, this sample consisted of 10,000 ‘reference persons’, which we follow from 2017 till 2019 (included). All people who are a household member of any of these 10,000, on 31<sup>st</sup> December 2017, 2018 or 2019, are also part of the sample, and for all people involved we collected detailed information from the population register, tax register and various social security registers. This sample is called Sample A.

**Table 1. Size of TAKE Sample A**

	Number of households			Number of individuals		
	2,017	2,018	2,019	2,017	2,018	2,019
YOUNG-SA	2,762	2,741	2,727	7,288	7,229	7,282
OLD-IGE	1,241	1,205	1,157	2,162	2,079	1,977
YOUNG-NOSA	3,935	3,911	3,893	7,885	8,265	8,461
OLD-NOIGE	2,062	1,973	1,878	4,536	4,296	4,067
<b>Total</b>	<b>10,000</b>	<b>9,830</b>	<b>9,655</b>	<b>21,871</b>	<b>21,869</b>	<b>21,787</b>

Note: for details, see Goedemé (2022).

Given that the sample was selected with respect to the population in December 2017 and the fieldwork could only start in the summer of 2019, some additional exclusions were made before the start of the fieldwork (e.g. having moved abroad or passed away by June 2019). The remaining sample which was invited for a face-to-face interview is called ‘gross sample B’.

In a first step, all households of initial gross Sample B were invited to take part in the TAKE survey and received a letter which explained the objectives of the survey, the value of taking part, its voluntary character, privacy matters, etc. The letter came with a response card that respondents could post for free to inform the data provider that they were *not* willing to take part in the survey. The Crossroads

Bank for Social Security and the Privacy Commission (the precursor of the Belgian Data Protection Authority) first insisted that respondents would be sent a response card to opt *in* for the survey. Only those who opted in, could be contacted by the survey agencies. However, we emphasised that this would lead to a very low response rate<sup>13</sup>. Furthermore, there would be a significant risk that non-response and non-take-up are relatively strongly correlated. If the threshold for not taking part in the survey is too low (i.e. just doing nothing), this effect would most likely be increased. Luckily, on these grounds we succeeded in convincing the Privacy Commission to work with an *opt-out* procedure, a precedent for a household survey that uses the CBSS data as a sampling frame. The opt-out procedure still implied sending response cards, but now respondents had to actively send the card back (which was free), if they wanted to opt out. To some this may still be a lower threshold than refusing participation when an interviewer knocks at the door, but at least it limited to some extent non-response<sup>14</sup>. Overall, 2,614 households, or 29% of the initial gross Sample B, sent back the response card, indicating they were not willing to be contacted for an interview. Sending back a response card, especially for those in the OLD-IGE and OLD-NOIGE targeted subpopulations seemed a very accessible way of refusing to take part in the TAKE survey.

People who did not send back their response card, were contacted by a trained interviewer to participate in a face-to-face interview. Overall, 23% of those in gross Sample B had a successful household interview. In particular for the IGE and NOIGE groups in Wallonia and Brussels-Capital Region we achieved low response rates. In the end, 1,909 households took part in a personal face-to-face interview (with separate interviews for the ‘main respondent’ and other adult household members). This sample, for which we have information both from administrative records and the TAKE survey, is called net Sample B. However, for about 42 households, item-non-response was too high, the selected reference person passed away before the end of 2019, or it was not possible to match the information from the face-to-face interviews with the administrative records. This implied that in total, 1,867 households were available for analyses that required both administrative data and information collected through face-to-face interviews. Obviously, if only administrative data is required, Sample A can be used.

**Table 2. The size of the TAKE sample with sufficient information from administrative records and face-to-face interviews**

	Households	Individuals
YOUNG-SA	619	1,805
OLD-IGE	238	411
YOUNG-NOSA	709	1,727
OLD-NOIGE	301	672
<b>Total</b>	<b>1,867</b>	<b>4,615</b>

<sup>13</sup> As was experienced in another project on a sensitive topic. With a similar procedure, Pacolet *et al.* (2012) report a response rate of 3.5% in Brussels-Capital Region, 4.4% in Flanders en 5.6% in Wallonia.

<sup>14</sup> In spite of using very accessible language and visible instructions on the card that it was meant for opting out, the fieldwork agencies reported some cases that some people thought the cards were there to opt in to the survey. 10 households even gave an interview (the response card was received by the fieldwork agency only after first contact). More information on the implementation of these response cards and non-response more generally can be found in a separate Fieldwork Report.

### 3.2.2. TAKE Questionnaire

The TAKE questionnaire was developed in 2016 and 2017, jointly by researchers from Universities of Antwerp and Liège involved in the consortium of the TAKE Project (for a detailed discussion, see Janssens *et al.* (2022)). A pre-final version of the questionnaire was pre-tested in the winter of 2017. The final version of the questionnaire was used in the main fieldwork period during 2019 and 2020. The questionnaire was available in three languages, English, Dutch and French.

The objective of the TAKE questionnaire was two-fold. First, in order to gauge the extent of non-take-up of the benefits under study, the questionnaire included questions on the receipt of benefits and cost-compensating measures and on relevant eligibility criteria (which are often not, or less detailed available in administrative data sources). Secondly, the TAKE questionnaire included information on important background characteristics of all household members (e.g. age, gender, educational background, work history, material deprivation, health problems...) and information on potential reasons for non-take-up (e.g. knowledge of benefits, problems when applying for benefits, attitudes against benefit receipt, etc.), necessary to better describe and understand non-take-up.

The TAKE questionnaire existed in two different versions, a longer one for the reference person of the household, and a shorter one for the other household members. The main questionnaire (interview duration of about 60 minutes) addresses the household situation (e.g. incomes, receipt of a specific benefit, house quality, health, etc.) as well as individual characteristics of the respondent. This questionnaire was only administrated to the reference person of the household. The reference person was defined as the person who is most familiar with the household finances, or is who is generally responsible for the application for benefits and services. The second and shorter questionnaire (interview duration of about 15 minutes) assessed individual characteristics only (e.g. socio-demographic information, professional career, personal income,... ). This questionnaire was used to collect additional information of other household members, older than 18 years old, who were officially or not officially part (e.g. not registered in the National Register) of the household of the reference person.

The table below presents an overview of the different modules included in both questionnaires. As observed from the table, the main questionnaire includes questions at the level of the household level and individual level. The second questionnaire only includes questions at the individual level.

**Table 3. Modules included in the main and individual questionnaire**

REFERENCE PERSON INTERVIEW		HOUSEHOLD MEMBER INTERVIEW
HOUSEHOLD LEVEL Questions exclusively asked to the reference person	INDIVIDUAL LEVEL Questions asked to the reference person and any other household member (older than 18)	
<u>Household composition</u>		
	<u>Information on the socio-demographic and financial situation of the individual, necessary to determine eligibility for the various benefits</u> <ul style="list-style-type: none"> <li>▪ Socio-demographics</li> <li>▪ Nationality and migration background</li> <li>▪ Education</li> <li>▪ Professional career (current job, including informal unemployment)</li> <li>▪ Willingness/capability to work</li> <li>▪ Incomes</li> <li>▪ Assets</li> <li>▪ Debts</li> </ul>	
<u>Use of benefits and determinants of non-take-up:</u> <ul style="list-style-type: none"> <li>▪ Knowledge and receipt of benefits</li> <li>▪ Attitudes towards receiving benefits</li> <li>▪ Specific benefits: <ul style="list-style-type: none"> <li>- Social assistance for people at active age</li> <li>- Income guarantee for elderly people</li> <li>- Increased reimbursement in healthcare</li> <li>- Heating allowance</li> <li>- Assistance allowance for elderly with care needs</li> </ul> </li> <li>▪ Health (physical and mental)</li> <li>▪ Material deprivation and affordability</li> <li>▪ Housing situation</li> </ul>		
	<ul style="list-style-type: none"> <li>▪ Scarcity/financial stress</li> <li>▪ Social network/network effects</li> <li>▪ Transport and mobility</li> <li>▪ Literacy and IT Skills</li> <li>▪ Life satisfaction</li> </ul>	

The development of the questionnaire's modules resulted from an extended review of the literature on the potential driving forces behind non-take-up and from the analysis of the TAKE-ISSOC database regarding the eligibility rules for the different benefits under consideration.

For the specific wording of the questions, we made use of existing questions (e.g. from the EU-SILC, SHARE, European Social Survey) or created new questions and survey instruments ourselves if validated questions on a particular topic were not available. Before pre-testing the questionnaire, various rounds of feedback were organised between all the partners of the project to check the quality of the draft questionnaire and to refine the questions and make some important decisions on the questionnaire design. Consequently, a pre-test protocol was established to test the first versions of the questionnaire. From May to December 2017, successive tests were carried out, including: test interviews with a non-target population, a detailed review by both social scientists and social workers, a focus group with “experience experts” in poverty and social exclusion, an online test survey for testing some specific survey instruments and a final face-to-face pre-test with online testing of statement questions and a final pre-test field survey.

### 3.2.3. TAKE Fieldwork and non-response<sup>15</sup>

The fieldwork was subdivided between the SHARE survey teams at the University of Antwerp and the University of Liège. Generally speaking, the Antwerp team covered the Region of Flanders and the Liège team the rest of Belgium. The TAKE survey fieldwork was completed by the work of about 80 interviewers. Half of them were trained in Dutch by the survey agency of the University of Antwerp. The other part was trained in French by the survey agency of University of Liège. All interviewers received an extensive one-day interviewer training before the start of the fieldwork. The TAKE survey training included a presentation on the context of the TAKE project, detailed explanations about the specific fieldwork protocols and the questionnaires, hands-on exercises on the survey software and a presentation of the required fieldwork materials (i.e. the introduction, letter, incentives, etc.). All interviewers were also required to do some homework before they could start contacting households.

The fieldwork started in September 2019. In Flanders the fieldwork was completed mid-December. For Brussels and Wallonia, interviewers experienced more difficulties to contact all households in time. Also, on March 17, 2020 all fieldwork activity had to be suspended due to the COVID-19 pandemic. Interviewers in Brussels and Wallonia restarted their work in August 2020 and by the start of October 2020 the fieldwork was completed. In total, 1,943 were contacted in Brussels, 1,643 households in Wallonia and 2,527 households in Flanders. The fieldwork resulted in 1,909 reference person interviews, i.e. the number of participating households.

To evaluate the TAKE fieldwork we considered two types of response rates: a minimum (RR1; including all households in the sample) and a maximum response rate (RR2; correcting for households with a wrong address or that could not be interviewed due to language barriers). Household participation was the highest in Flanders (RR1 is 38.7%), and lower in Wallonia (RR1 is 33.0%) and Brussels (RR1 is 24.0%). Overall, the observed RR1 is 32.5%. Correcting for the households that were not eligible for a reference person interview (RR2), the response rates reach higher levels: 44.8% in Flanders, 39.0% in Wallonia and 29.9% in Brussels. The overall RR2 is 38.7%. The differences between the two types of response rates are comparable for all regions.

While these response rates provide some insight into the degree of success of the fieldwork, they leave out the non-response that occurred before the fieldwork started. As explained above, in a first

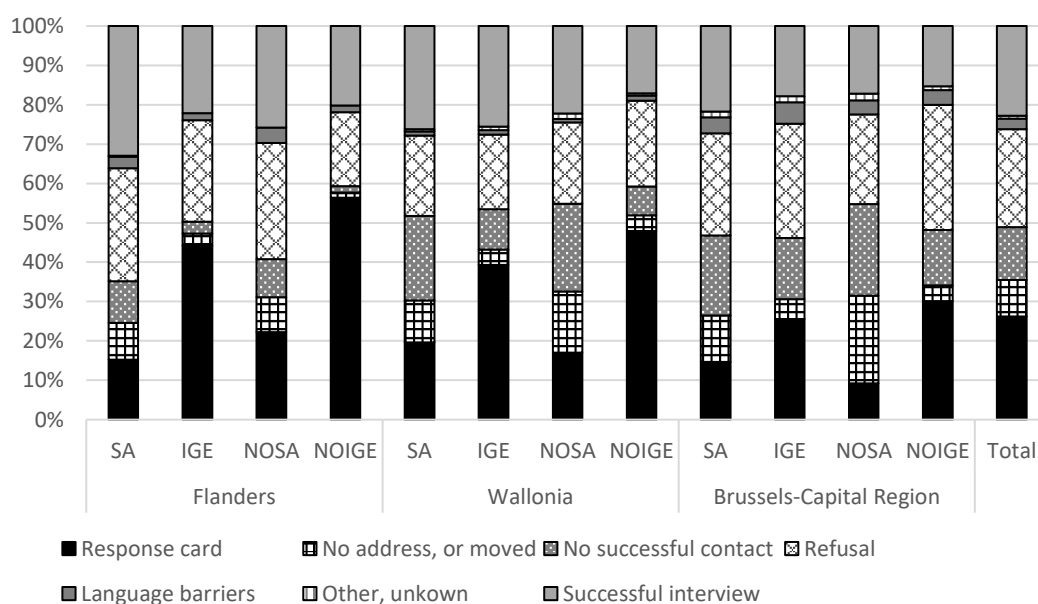
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<sup>15</sup> A detailed discussion of the fieldwork can be found in Linchet *et al.* (2022). Total non-response is discussed in more detail in Goedemé (2022).



step, people received a letter with information on the survey and a response card to opt out of the survey. The graph below provides some more insight in the overall rate of response and non-response, as, broken down by reason of non-response. The overall response rate was 23%, and was lowest in Brussels-Capital Region and highest in Flanders. Total response was lowest in the OLD-IGE and OLD-NOIGE subpopulations, which are also the groups that were most inclined to send back the response card to opt out from the survey. Overall, refusals through the response card was the most prevalent source of non-response (34% of non-response), followed by regular refusals and lack of successful contact (32% of non-response). It is noteworthy, though, that the variation in the degree to which response cards were sent back, is much higher than the variation in final response rates.

**Figure 9. Breakdown of gross Sample B by response and reasons for non-response**



Note: Region refers to the official Region of residence on 31<sup>st</sup> December 2017. Refusals include 25 households that refused data linkage between the survey and administrative records and 30 households that refused 'because of COVID'.

The table below presents the distribution of the reasons for refusal among all refusing households separated by region. Please note that these figures need to be interpreted cautiously as respondents do not always motivate their refusal in a straightforward way. In many cases, the coding of a refusal depends heavily on the personal evaluation of the interviewer. In Flanders, respondents often indicate that they are not interested to participate in the TAKE survey or tend to be against surveys in general (29.6%), while this reason was less frequently mentioned in Wallonia and Brussels (12.2% and 10.5% respectively). Around 20% of the refusals express a lack of time to participate to an interview in all regions. A result that stands out is that nearly half of all the refusals in Brussels are motivated by bad health or being too old to participate. This proportion is also high in Wallonia, with a share of more than 40%. Refusals to take part because of data linkage are very rare (1.4% overall). Finally, refusals due to fear of COVID-19 infection were predominantly present in Wallonia as a substantial part of the fieldwork was continued in this region after the start of the COVID-19 pandemic in Belgium.

**Table 4. Reason of refusals among all refusing households by region (%). N = 1854 refusing households**

	No interest, against surveys	Too busy, no time	Too old, bad health	Other reasons	Data linkage	COVID-19	Total
Flanders	29.64	20.47	10.40	39.15	0.34	0.00	100.00
Wallonia	12.22	21.76	40.59	16.14	2.20	7.09	100.00
Brussels	10.53	20.87	49.73	16.15	2.54	0.18	100.00
Total	20.12	20.87	28.75	27.24	1.40	1.62	100.00

Among participating households with more members than just the reference person, adults were eligible for a household member interview, with the purpose of collecting more complete information about the entire household. The table below shows the household member response rates and related characteristics. The highest number of household member interviews was observed for Flanders (n=357). However, if we compare this number with the number of participating households (cf. reference person interview), Wallonia shows the highest proportion of participating households with at least one household member interview (38.5%), followed by Brussels (32.9%) and Flanders (30.0%). In Brussels the mean number of interviews per household with at least one household member interview is substantially higher (1.80) than in the other regions (1.30 and 1.26 for Wallonia and Flanders resp.). In 60.8% of Brussels' households one additional interview was registered, while in Wallonia (78.5%) and Flanders (83.0%) the large majority of households yielded only one household member interview. Whereas Wallonia shows the highest response rate at the household level, in Brussels multiple household member interviews took place within the participating households more often. Please note that these outcomes strongly depend on the household compositions within the regions. According to the official list of household compositions between 36% and 37% (not shown) of the households with a reference person interview are not eligible for household member interviews in each region as it concerns single-person households (i.e. only reference persons). This is in line with the higher individual response rate for Wallonia, with only 24.6% of the multiple member households not participating to the household member interviews (33.1% and 30.2% for Flanders and Brussels resp.). The household composition list also learns that, on average, the participating households include more members in Brussels (2.72) compared to Flanders (2.56) and Wallonia (2.33). Finally, the fieldwork results show that almost 94% of the household member interviews are with respondents identified from the official household list. In Wallonia a higher percentage (11.2%) of the household member interviews was with persons living in the participating households without being an officially registered member (or became it only recently before the interview).

**Table 5. Response rates and other characteristics household member interviews by region (percentages based on households with a reference person interview).**

	Number of household member interviews	Number of participating households	% of participating households	Mean number of interviews per household	% of households with one household member interview	% on official household member list
Flanders	357	283	30.0%	1.26	83.0%	97.5%
Wallonia	259	200	38.5%	1.30	78.5%	88.8%
Brussels	267	148	32.9%	1.80	60.8%	94.0%
Total	883	631	33.0%	1.40	76.4%	93.9%

### 3.2.4. The TAKE Dataset

In this section, we describe the different steps and procedures we followed to build the input dataset that was used in the TAKEMOD microsimulation model to estimate the non-take-up rates of different social benefits. Full details can be found in Bolland (2022). The input dataset includes variables constructed from administrative sources and variables constructed on the basis of information available in the TAKE survey. It contains a total of 4,986 observations, which are the main respondents of the TAKE survey and the other members of their household. These households were constructed on the basis of the information mentioned by the main respondents in the TAKE survey<sup>16</sup>, which means that they reflect the real composition of the household rather than the official composition available in the administrative sources. Indeed, the actual composition of the household is necessary in order to determine the eligibility for certain social benefits. First, we describe in detail the different steps of data merging we had to perform in order to obtain the final database. Then, we explain the imputation procedure used in order to impute the missing data of three variables used in the simulation (personal disposable income, personal savings, and amount of social assistances benefits received). We conclude with a very brief section on the sample design variables used in the analysis, which is discussed elaborately in Goedemé (2022).

#### 3.2.4.1 Data merging

In order to construct a complete dataset with all household members we followed different merging steps. In a first step we merged the data of the reference person interview with data of the additional household member interviews. In total 1,909 reference persons interviews were combined in one dataset with 869 additional household member interviews (total dataset of n=2,778). In a second step, we merged the dataset obtained in step 1 with the national register data for year 2019 based on the respondent ID in order to include the administrative data of all survey respondents in the dataset. From the 2,778 observations, 139 could not be matched with the administrative file, either because they passed away according to administrative data (very few cases), or because they had a missing administrative ID and were therefore not included in our administrative sample of 2019 (“unofficial” household members). Since people without an administrative ID in our dataset cannot be found directly (based on their personal identifier) in the administrative file, we tried to merge them with the

<sup>16</sup> In the TAKE survey, the main respondents were asked about the age and gender of the other household members as well as the relationship between them and each household member.

national register file by using the information about the reference person of the household in which these persons are living, their age and their gender (the survey and the national register file both contain information on these three components). This exercise resulted in 40 additional household members that could be matched with administrative data.

After creating this new database that combines survey and administrative data, the next step was to start from this dataset and use the survey information given by the main respondents about the other household members living with them to add those who did not participate to the survey to the dataset. In the reference person interviews, the main respondents reported the age, gender, and the relationship between them and the other household members. Based on this information, we created one additional row in the dataset for each household member (adults and children) who did not participate to the survey. By doing this, we obtain a dataset of 4,995 observations, including 1,909 main respondents, 860 other household member participants, and 2,226 household members who did not participate to the survey. Also for these 2,226 household members we tried to add their administrative data to the new dataset by performing several merging attempts with the national register file of year 2019 based on the reference person, the age and the gender of the person in question. From the 2,226 additional household members, 380 could not be merged with the administrative file.

#### *3.4.2.2 Imputing missing data*

We carried out some imputations for several key variables to compensate for item non-response. These variables include the individual's total monthly disposable income, the individual's personal savings, and the individual's monthly amount of SIA received. The values were missing either because the survey respondent did not respond to the question (or responded that he/she didn't know) or because the survey information is lacking for the household members who did not participate in the survey.

We assumed that children below the age of 16 years old did not have any personal income and personal savings and therefore imputed the value of 0. For other household members with missing information, we used multiple imputation by chained equation (MICE) to impute missing values. This method imputes multivariate missing values on a variable-by-variable base (Van Buuren, 2018). For more details on this approach and how this was implemented in TAKE, see Bolland (2022). Overall, the models had a good fit and produced plausible results.

#### *3.4.2.3 Weights and sample design variables*

The TAKE Survey makes use of a complex sample design, including unequal probabilities of selection, clustering, stratification and multiple stages of selection. All these factors have been taken into account as much as possible during the analysis, both for getting the point estimates and estimated confidence intervals right. Overall, we make use of a rather conservative approach for estimating confidence intervals, implying that we probably underestimate the statistical precision of the estimates based on the TAKE survey (for details, see Goedemé (2022)).

As regards clustering and stratification, full information was available to us. Self-representing primary sampling units are considered additional strata, implying that households are treated as primary sampling units in this case. As regards the weights, we developed various sets of weights, each adapted to the analysis of a specific domain, while making a distinction between weights to be used for analysing complete Sample A, gross Sample B, or net Sample B with complete information on households. Weights were adjusted for differences in probability of selection (Sample A & gross

Sample B), as well as differences in eligibility for interview and non-response (treated in one stage). We also computed poststratified weights based on the TAKE\_Totals sample, although they are based on a large sample rather than population data, so must be used with caution. We were able to make use of a rather extensive non-response correction model, given that we had very rich administrative data for both respondents and non-respondents. For instance, the non-response model includes variables on take-up of SIA, IR and IGE, as well as proxies of non-take-up, as simulated with the BELMOD model, which only makes use of administrative data (see below). This provided a powerful way of reducing non-response bias. Separate non-response correction models were estimated for each of the domains.

A Stata ado-file was created which allows users of the TAKE data to easily specify the correct sample design settings, including weight selection. Finally, it is worth emphasising that when performing domain analysis, we appropriately take the randomness of the size of the sample for each domain into account, as is recommended in, for instance, Heeringa *et al.* (2010). Overall, the specific setup of the TAKE sample design resulted in a relatively large variation in the weights, which boosted further estimated standard errors and confidence intervals. As we explain in Chapter 5, the lessons learned from the TAKE survey and the new data landscape in Belgium in 2022 as compared to 2016, should allow researchers to identify a somewhat less complex and statistically more efficient sample design.

### **3.3. TAKEMOD microsimulation model**

If it would be straightforward to identify and count the people who are entitled to a benefit, but do not receive it, the problem of non-take-up of benefits would be easily solved. Entitled beneficiaries could be identified and the monetary benefit transferred. However, identifying the persons who are in a situation of non-take-up comes with many methodological challenges and large data requirements. To calculate non-take-up we first need to know who is entitled to a specific benefit and who does receive and does not receive this particular benefit. Information about receipt is usually relatively easy to collect, by making use of administrative sources or by simply asking people in surveys whether they receive a particular benefit or not.<sup>17</sup> However, to identify the group of persons entitled to a particular benefit is somewhat more challenging. In order to do so, one needs a microsimulation model which replicates the eligibility tests of benefits on the basis of the variables available in a certain dataset. In what follows, we describe the simulation model and the data that were used to create the input dataset for the model, for a more elaborate discussion of these topics, see Janssens and Derboven (2022).

For the assessment of eligibility in our sample, we use a tax-benefit microsimulation model. In such a model, a set of tax and benefit rules is applied to representative data at the level of individuals and households. Specifically for benefits, this means that it simulates the benefit entitlements according to the policy rules in place. In this way, the model calculates for each individual (or household) in the underlying dataset whether or not the person (household) is entitled to a certain benefit and the amount obtained (on the basis of the available information on this person/households in the dataset underlying dataset).

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<sup>17</sup> The first way is generally considered to be more reliable as people not always know which specific benefits they receive.

An existing micro-simulation model that is commonly used in different European countries is the EUROMOD model (ref). EUROMOD is a tax-benefit microsimulation model for the European Union which calculates (simulates) taxes and benefits on an annual basis for a representative sample of detailed data at the level of individuals and households (the EU-SILC dataset). Another, more recently developed tax-benefit microsimulation model is the BELMOD model. The BELMOD model was recently developed to simulate a wide range of social policies in Belgium, using register data from different social security institutions (Federal Public Service Social Security, 2022). This model makes use of the EUROMOD infrastructure (i.e. the software and the simulation tools) but runs on administrative data instead of survey data (such as EU-SILC, the default in EUROMOD). To make it possible to run on the BELMOD dataset, new policy simulations of the Belgian taxes and benefits were created for this model.

In the TAKE Project, we use an adapted version of the BELMOD microsimulation model, which was further expanded in order to 1) program eligibility conditions with more detail and 2) to allow the model to run on a combination of survey and register data (instead of register data only). This is an important adjustment as register data typically do not contain all the information that is used in real life to assess eligibility for certain social benefits (in particular for social assistance). Also, administrative sources keep record of the persons who are officially registered at the same address, whereas in real life social workers and administrators take into account the actual composition of the household in the determination of the appropriate benefit category and the cohabiting household members whose incomes are taken into account in the means test.

Essential information to determine eligibility for the four benefits we study in detail in the TAKE project (i.e. social assistance for persons at active age, the income guarantee for the elderly, the increased reimbursement in healthcare and the heating allowance), and which was missing from register data was collected in in the TAKE survey. As a result, the refined and extended BELMOD model could be used to determine on the basis of a more complete and detailed dataset eligibility for the four benefits under study.

The BELMOD and adapted BELMOD model (hereafter called the TAKEMOD model), are very similar, although differ on several aspects. First, in both models the underlying inputdataset that is used for the simulations is developed on very similar administrative data, provided by the Crossroads Bank of Social Security (CBSS). It includes data from the Datawarehouse Labour Market and Social Protection (LM&SP), which consists of register data provided by different social security institutions. In addition, both input datasets are constructed using tax data from the IPCAL database. The main difference between the two inputdatasets is that in the TAKEMOD inputdataset, we lack administrative data from the STIPAD/CADNET database, which includes register data on real estate.

Second, in the TAKEMOD model, we only simulate eligibility for the four benefits under study and make use of observed (administrative) amounts for all other benefits or taxes. In the BELMOD model on the contrary, also eligibility for other benefits and taxes are simulated (e.g. unemployment benefits, sickness and disability benefits), which allow users of the model to either use simulated benefit amounts or observed benefit amounts in their calculations. Also, in the TAKE project we were not able to simulate taxes and tax deductions and therefore approximate the amounts of taxes paid/received on the basis of aggregated IPCAL information.

Taking into account these limitations, we developed an “**admin**” model which is a replication of the original BELMOD model with some necessary adjustments in order to make sure that the model was able to run on the TAKE inputdataset. In this model we simulate social contributions for employees,

self-employed and pensioners, special social insurance contributions, social assistance for persons at active age, income support for the elderly, the increased reimbursement in healthcare and the heating allowance.

Given that the admin model is designed to run on the available register data, in a second step, we have extended the model and adapted it to the information available in the TAKE Survey. In the TAKE survey we have collected additional information that is not available in administrative data sources to enable a more precise assessment of the eligibility of the individuals and households in our sample. For example, information on work willingness (which is one of the eligibility conditions for social assistance) or movable and immovable assets is (largely) missing from administrative sources. Also, in the TAKE Survey we were able to collect information about actual household composition, which especially with vulnerable households, can be very different from the official household composition. With this additional pieces of information, eligibility conditions could be programmed with more detail in the model (hereafter called “**mixed**” model) and the model could run on a more complete dataset consisting of both survey and administrative data.

Finally, we also developed a third version of the model that was designed to run only on survey data from the TAKE survey (the “**survey**” model). This model has the advantage that eligibility tests could be programmed in detail, but comes with the disadvantage that only self-reported income from the TAKE survey could be used which is generally considered to be less reliable than administrative information on income. Also, in the TAKE survey we only ask about total disposable household income instead of the different income sources separately.

As our goal was to replicate the application and assessment procedure for the four benefits under study as closely as possible, we decided to use the mixed model as the baseline model in TAKEMOD, and to use administrative data for the information that is administratively verified by administrators and use survey data for information that administrators ask applicants to provide themselves because they are not administratively available or less accurately/up-to-date.

The extent to which both administrative and survey data are used in the modelling of the eligibility tests, differs for the four benefits under study. To simulate the entitlement to the income guarantee for elderly, increased reimbursement in healthcare and heating allowance, we mainly use administrative data, since most of the information needed is administratively available and also used by administrations in this way. A limited amount of data is taken from the TAKE survey. To simulate entitlement to social assistance for persons at active age, administrative data are more incomplete (e.g. on assets, current family situation and willingness to work) and social workers make often use of a combination of register data and information provided by the applicant himself to assess eligibility. In what follows, we describe briefly the entitlement conditions for each of the four benefits under study and how these conditions are modelled in the TAKEMOD “mixed” model.

### 3.3.1. Social assistance for persons at active age

Social assistance for persons at working age serves as a final safety net in Belgium, to which persons can apply if they are not eligible for social insurance schemes (e.g. for unemployed persons) or other categorical social assistance schemes (e.g. directed at handicapped persons), and when their means fall below a certain threshold. In order to receive social assistance, one has to file an application at the Public Centre for Social Welfare (PCSW) of the municipality in which he/she lives. These centres have some discretionary room in the assessment of the claimant’s application.

The following eligibility conditions should be met in order to be eligible social assistance:

- being at least 18 years old, or persons below 18 can be eligible as well in case they are married, pregnant or have dependent children (age criterium)
- having the Belgian nationality, another EU nationality, or being a registered foreigner, stateless person or recognized refugee (nationality condition)
- having a legal residence in Belgium (residence condition)
- being available for work (except when one is exempted for health or equity reasons) (work willingness condition)
- having means below a certain threshold (income condition)

The latter condition is the most important and implies that the applicant is subject to a household-based means test. The means of the applicant and the persons with he/she cohabits are taking into account according to an administrative formula and compared with a threshold, which differs for different categories of beneficiaries: (1) individuals that live together with others; (2) individuals living alone; and (3) individuals living together with at least one dependent person. The maximum, monthly amount of awarded benefit is 743,78 for persons living together with others, 1115,67 euro for persons living alone and 1507,77 euro for persons living with dependent persons (amounts in 2022). To assess eligibility for social assistance, the PCSW will carry out a comprehensive social investigation to identify all available income sources of the applicant. The type of means that are taken into account include:

- employment income (including from self-employment)
- replacement incomes
- income from real estate<sup>18</sup>
- income from assets<sup>19</sup>
- income from the disposal of property in the past 10 years preceding the application<sup>20</sup> of the applicant, his/her partner and possible cohabiting (major) ascendants and descendants in the first line.

The following income components are not taken into account:

- benefits in-kind (such as meals)
- social assistance
- child benefits

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<sup>18</sup> The calculation for income from real estate is the following: non-indexed cadastral income with an exemption of €750 plus €125 per dependent child (=child that gives right to child benefits). The result is then multiplied by 3 and taken into account in the means test. In case the property is rented one takes the rent received unless this should be less than the amount obtained when using the cadastral income. As social assistance is an individual right the income from real estate will be multiplied by the fraction representing the ownership of the person in the property (in case of shared ownership).

<sup>19</sup> The first €6,200 of (financial) capital is not taken into account. For the part between €62,000 and €12,500, 6% is taken as income from capital and for the amount higher than €12,500 10% is taken into account as income from capital

<sup>20</sup> This income source is taken into account in the same way as income from movable assets



- alimony for children
- study grants
- refundable tax credit for children

As stated below, in the baseline TAKEMOD model, we use a combination of administrative and survey data to operationalize the eligibility conditions in the simulation model. Table 6 presents an overview of the different eligibility criteria, the type of data source used for their operationalization and possible problems experienced with this.

**Table 6. Eligibility conditions for social assistance and operationalization in TAKEMOD**

TAKEMOD mixed	Data source	Taken into account?
Household composition	Survey	
Age condition	Administrative	
Nationality condition	Survey	Not taken into account
Residence condition	Administrative	Only partially able to verify
Work willingness condition	Survey	Not taken into account
Income/means condition	Administrative + survey	
Labour market income	Administrative	
Replacement income	Administrative	
Income from immovable assets	Survey	
Income from movable assets	Administrative + survey	
Income from assets transfers	Survey	
Income from ascendants/descendants	Administrative + Survey	
Household composition	Survey	

As it is important to work with the actual **household composition**, we use the information from the survey as reported by the reference persons of the household, to determine the household situation and benefit category of the applicant.

To operationalize the **age** condition, we used administrative data as we assumed this data to be more reliable compared to the age information reported in the survey. For the persons without an administrative age (i.e. “unofficial household members), we used their age as reported in the survey by themselves or the reference persons of the household.

Information on **nationality** could be retrieved both from administrative sources (e.g. in order to identify asylum seekers using the national register) and the TAKE survey (e.g. using a more detailed question on nationality and legal statute). Despite originally modelling the nationality condition using survey information, we decided not to include this condition in the simulations for social assistance.

This is because in Belgium, people who are not entitled to the regular Social Integration Allowance because they do not meet the nationality criteria but still find themselves in a very vulnerable situation without sufficient means, are entitled to the Equivalent Social Integration Allowance. Similar to the regular Social Integration Allowance, there are three benefit categories with the same maximum amounts. As our goal was to simulate eligibility for both equivalent and regular social assistance, we did not take the nationality condition into account in our simulations.

Neither the administrative or survey data allow us to entirely verify the **residence** condition, which prescribes that the person considered should have his habitual and real residence in Belgium, meaning that the person should habitually, continuously and legally reside in Belgium. However, the input dataset we use is based on a sample of people who are included in the national register. All persons in the national register are officially and regulatorily registered in a Belgian municipality or have applied for political asylum. This means that the available administrative data provide only partial information on whether the residence conditions to be entitled to social assistance are met. Every person in our dataset might legally reside in Belgium, however we cannot ascertain that this is really the case. Also, they might not comply with the requirement to notify a stay abroad or with the restrictions concerning the duration of such stays.

In reality, social workers and PCSWs have some discretionary room in how to evaluate the **work willingness** requirement. Usually, it is assessed on the basis of the concrete possibilities and personal efforts of the person concerned, but also a positive attitude towards job offers from the PCSW or the employment service, attending training courses, etc. might be taken into account. The only available information about work willingness stems from the TAKE survey, in which we tried to measure the person's circumstances and possibilities for being able to work (i.e. his/her age, education, health, family situation) and personal efforts related to job search, in accordance with the legislation. Nonetheless, we decided not to take the work willingness condition into account when determining the group of persons eligible for social assistance, as we know from other studies (ref.) that most social workers do not make social assistance entitlement dependent on work willingness, but only assess it after the right to social assistance is opened. It is only then that work willingness becomes more important, i.e. as a condition to preserve the right to social assistance, or otherwise lose it.

The most important part of the application procedure is that the applicant is subject to a household based means-test to assess whether **the means** of the household or below the maximum amount of the Social Integration Allowance. In reality, social workers can make use of a combination of administrative data and self-reported data by the applicant. Therefore, to construct a total income concept we made use of a combination of administrative and survey data. Another major question is whose income should be taken into account. More in particular, there is some room for discretion with respect to incomes of parents and (adult) children living in the same household. To assess which scenarios were most relevant in this respect and with respect to some other factors, we ran brief online survey among Public Centres for Social Welfare. For key questions, we had a response rate of about 33%. The results of the survey confirmed there was a substantial amount of variation in how the financial resources of the claimant's parents and adult children were taken into account.

For both employment income (including income from self-employment) and replacement income we use administrative data as social workers usually consult the CBSS to verify the amount of these income sources. Nevertheless, there are some limitations associated with the use of administrative data provided to us by the CBSS. The two most important ones being that we often only have quarterly

or yearly data available, whereas in reality social workers check the income of the month preceding the application. Second, net income concepts are included in the means-test, whereas we only have information on gross income (e.g. gross employment income). In TAKEMOD we are not able to simulate social security contributions and payroll taxes (in contrast to BELMOD), therefore we approximated the total amount of social security contributions by assuming it to be 13.07% of employment income. For a more detailed description about the limitations and how we dealt with it, see Janssens & Derboven (2022). As the administrative data we have about immovable property was very limited (i.e. only the cadastral income of the family house on the basis of the tax declaration, we measure income from immovable assets using information from the TAKE survey). Here we inquired about the cadastral income of the family house (including the share of the ownership), but also about the other properties the household might possess. Subsequently, income from immovable property was calculated in accordance with the legislation (i.e. by adjusting for partial ownership and using the exemptions rules) (see Janssens & Derboven, 2022 for more detail and the assumptions made).

Also for movable assets, in Belgium we lack administrative data on the assets individual and households assesses. Therefore, we have surveyed the amount of movable assets (including savings, obligations, etc.) the household has in the TAKE survey. For couples we were able to distinguish between common assets and individual assets in the survey. Subsequently, income from movable assets was taken into account in accordance with the legislation (i.e. by applying different rates to different asset brackets). Finally, if the applicant has transferred assets during the 10 years prior to the application for social assistance, these assets may be taken into account in the calculation of the own means in the same way as the movable assets are taken into account. Administratively this information is not directly available, while we did questioned the selling or donation of a property in the TAKE Survey with its associated amount. For the persons for who this was relevant, we included these assets in the means-test following the same procedure as movable assets are taken account, however with some small adaptations/assumptions to the policy (see Janssens & Derboven, 2022). The table below shows how total disposable income concept is constructed:

**Table 7. Resources included in IL\_MeansY**

+	IL_YEM	Employment income
+	YSE	Self-employment income
+	IL_SICKY	Sickness and disability related benefits
+	ILS_PENS	Old age pensions/ Survivor pensions/ Early retirement pensions
+	IL_BUN	Unemployment benefits
+	BMA	Maternity leave
+	BFAPL	Parental leave
+	YPP	Private pension
+	YIVPR_S	Income from immovable assets (simulated)
+	YIVYI_S	Income from movable assets (simulated)
+	ATR_S	Income from assets disposal (simulated)
+	BSADI	Social assistance disabled
+	BSADIEX	Social assistance disabled - extinguished system
+	BSATH	Social assistance disabled elderly
+	BSAOA	Income support for the elderly
-	IL_SICEE	Social insurance contributions (former) employee
-	IL_SICSE	Social insurance contributions self-employed
-	ILS_SICOT	Other social insurance contributions

### 3.3.2. Income guarantee for the elderly

Income support for the elderly is a minimum income allocated by the Federal Pension Service (FPD-SFP) to people who have reached the legal retirement age of 65 years and who have insufficient financial resources. The entitlement to income support for the elderly is automatically examined if, at the time of claiming the pension, it appears that 90% of the pension is less than the basic amount of the guaranteed income for elderly. For those who receive social assistance for persons at working age or income support for the disabled, the entitlement to guaranteed income for the elderly is automatically examined, six months before they reach the age of retirement. If a person assumes he/she is entitled but his/her entitlement has not been automatically examined, he/she can submit an application to the municipal administration or to the FPD-SFP. The FPD-SFP assesses which incomes of which family members are taken into account and ultimately decides whether or not a household is eligible. They can rely on administrative data that they obtain via electronic fluxes as well as on information provided by the claimant.

The following eligibility conditions should be met in order to be eligible the income guarantee for the elderly:

- having reached the legal retirement age (+65) (age condition)
- having the Belgian nationality, a nationality from a country from the European Economic, being a stateless person, recognized refugee or foreign national (on the condition that one is entitled to a Belgian retirement or survivor's pension and has the status of long-term resident in Belgium or in another member state of the European Union or has a career in Belgium of at least 312 working days (nationality condition)
- having a legal residence in Belgium (residence condition)
- having means below a certain threshold (income condition)

In what follows, we describe how we have operationalized the different eligibility conditions of the income guarantee for elderly and which data we used for it. The remaining beta error is relatively high: about 29% of those receiving IGE were considered not eligible according to the TAKEMOD model. Table 9 also provides an overview.

**Table 8. Eligibility conditions for the income guarantee for the elderly and operationalization in TAKEMOD**

Income Support for Elderly (BSAOA)	Data source	Taken into account?
Household composition	Administrative + Survey	
Age condition	Administrative	
Nationality condition	Survey	Not taken into account
Residence condition	Administrative	Only partially able to verify
Income/means condition	Administrative + survey	

Labour market income	Administrative	
Replacement income	Administrative	
Income from immovable assets	Survey	
Income from movable assets	Administrative + survey	
Income from assets transfers	Survey	
Income from ascendants/descendants	Administrative + Survey	

Detailed information on the **household composition** is important for two reasons. First, the amount of benefit paid depends on the benefit category to which one belongs, which is itself dependent on the household situation in which the applicant lives. The two benefit categories are:

- Category 1: The applicant shares the same main residence with one or more other persons. The maximum amount will not exceed 8946.89 EUR (amount 2019).

Category 2: Persons who do not share the main residence with one or more other persons. The maximum amount will not exceed 13420.34 EUR (amount 2019).

The following persons are not considered to share the same principal residence with the applicant, although in the population registers they are registered at the address of the applicant:

- minor children;
- adult children for whom child benefits are received;
- persons in the same resting home, the same nursing home, or the same psychiatric care home if the applicant resides in such a facility;
- relatives by consanguinity or affinity in the straight ascending or descending line and their legal cohabitants.

Besides for determining the benefit category, household characteristics are important for the means test as well. In particular, the law defines that all means of existence and pensions of the applicant and the spouse or legal cohabiting partner will be taken into account for the means test at the time of submitting the application (see below).

To reconstruct the **household composition**, we combine survey and administrative data to both identify the official/legal partner and cohabitants of the potential beneficiary (on the basis of information from the National Register), and the non-official partner and household members (on the basis of survey information). This is important as only the means of the official partner are taken into account by the FPD-SFP, while the actual household composition (potentially including non-official partners or household members) is used in the means-test (e.g. to divide certain income amounts by the total number of household members).

To operationalize the **age** condition, we used administrative data as we assumed this data to be more reliable compared to the age information reported in the survey. For the persons without an administrative age (i.e. “unofficial household members”), we used their age as reported in the survey by themselves or the reference persons of the household.

To operationalize the **nationality condition** we use information from the TAKE survey as the available administrative data is not sufficiently detailed to verify all legal statutes. In the TAKE survey we explicitly inquire after the current nationality of the respondent and the respondent's legal statute.

Similar to the **residence condition** for social assistance at active age, with the information available (survey and administrative), we can only partially verify the residence condition for the income guarantee for the elderly. The only information we have, originates from the National Register and tells us that all persons included in our sample are officially and regulatory registered in a Belgian municipality.

The legislation stipulates that the income guarantee for the elderly can only be assigned after an examination of the means of existence; these means encompass all means of existence and pensions of the applicant and his or her spouse or legal cohabitant unless they have been explicitly excluded by law. In particular, the following sources are exempted:

- Child benefits
- Any benefits or interventions related to public or private assistance
- Alimony payments between ascendants and descendants
- Front stripes and imprisonment annuities
- Pensions related to a national order received for wartime events
- Social assistance benefits for the disabled
- Compensation paid by the German State for the detention during the Second World War
- Compensations received for voluntary work (within certain limits)
- Allowances, benefits and supplements of the Communities for housing of young people in a foster family

In addition, there is a general exemption on all income sources together (applied after all other exemptions mentioned below), on an annual basis this amounts to:

- 625 euro per year for category 1 (cohabitant)
- 1000 euro per year for category 2 (single or equivalent)

The means that are included are:

- Labour market income: in particular 75 % of the gross annual salary will be taken into account in the case of an employee, 100 % net professional income will be taken into account in the case of a self-employed person and 75 % of the actual gross wage or fictional wage communicated to the tax authorities will be taken into account in the case of a self-employed helper. To operationalize labour market income in TAKEMOD we use administrative variables to assess labour market income because the FPD-SPF also uses administrative data (from the FPS Finance) to verify income from labour and in the survey we have only information about total disposable personal income and we can therefore not distinguish between the different income sources.
- Pensions: in particular 90% of the Belgian and foreign statutory pensions are taken into account in the means-test, as well as 90% of the gross annual pension bonus. To include pensions in the total disposable income we make use of detailed information from the FPD-SPF itself. These pension sources are included in the income list `il_meansBsaOaP`.

- Social security benefits: Except child benefits, study grants and school fees, all other social security benefits are for 100% taken into account in the means-test. To do so, we make use of administrative data, in particular delivered by the FPS Finances. Paid alimony is never taken into account and received alimony is only deducted if received from ex-partners.
- Income from immovable property: Income from immovable property is taken into account by using the cadastral income of the properties owned of the applicant. As we only have limited administrative information on immovable property (in particular only on the basis of persons' tax declaration), we make use of survey data to include this income source. Normally, income from property is included on the basis on two separate calculations: one for undeveloped property (basically land) and one for developed property. Unfortunately, we do not know from the questions in the TAKE survey whether the properties owned are developed or underdeveloped. Therefore, we assume that all properties are developed.
- Income from movable assets: regardless of whether the assets are held in cash or invested, a zero rate is applied to the first asset bracket (EUR 1-EUR 6 200); a 4% rate is applied to the second asset bracket (EUR 6 201 – EUR 18 600) and a 10% rate is applied to any wealth beyond this threshold. The means test is mainly based on information concerning movable assets that has been gathered through the social investigation. As Belgium lacks a central register of movable property there is little administrative information on this topic. Therefore, in TAKEMOD we make use of survey data to replicate income from movable assets. For couples, we distinguish between common assets and individual assets. Both variables were taken together in the income list `il_meansBsaOaA` (see the tables below). Subsequently, income from movable assets was taken into account in accordance with the legislation.
- Income from assets transfers: If the applicant has transferred assets during the 10 years prior to the evaluation date for the current request, these may be taken into account in the calculation of the applicant's means. The sales value of the assets at the time of the transfer is taken into account. A fixed amount of 37 200 euro is exempted, and for assets beyond this level the same rates and brackets are applied as the ones used for movable assets. As we do not have any information about assets transfers from administrative data sources, we collected these data in the TAKE survey and use it in our simulations. However, we made the following two assumptions/adaptions to the policy. First, we do not know how many properties the person concerned owned. We assume that the property sold/donated is the only property and therefore an amount of 37200 is exempted. Second, in case of a partner being present, we assume that ownership was equally shared between both partners, therefore the amount of the property, the exemption amount and asset brackets are divided by two when taking the income from assets transfer into account at the individual level.

The tables below show how the different income concepts that were used for the simulation of the income guarantee for the elderly in TAKEMOD.

**Table 9. Resources included in `Il_MeansBsaOaY` (income)**

+	<code>YEOAMN_S</code>	Employment income (simulated)
+	<code>BSS02</code>	Replacement income (social security)
+	<code>BUN</code>	Unemployment benefits
+	<code>YIVPR01_S</code>	Income from immovable assets (simulated)

+	YIVY01_S	Income from movable assets (simulated)
+	ATRO1_S	Income from assets disposal (simulated)
+	YMP_T	Maintenance payments received
-	XMP_T	Maintenance payments paid

**Table 10. Resources included in il\_meansBsaOaP (pensions)**

+0.9	POA	Pensions
+0.9	PSU	Survivor pensions
+0.9	POPNT	Other pensions

**Table 11. Resources included in il\_meansBsaOaA (assets)**

+	YPP	Private pensions
+	APE_T	Personal movable assets (survey)
+	ACM_T	Common movable assets (survey)

### 3.3.3. Increased reimbursement in healthcare

The predominant social safety net in Belgium’s healthcare is the subsidised insurance scheme “Increased Reimbursement” (IR). Although renamed and restructured in 2014, IR has been available since 2007. Eligibility for the increased reimbursement is determined in two ways: as a derived right or by passing an income test. In the first scenario, people are entitled to the IR because they already receive another kind of benefit, being the (equivalent) Social Integration Allowance (for at least 3 months), an income guarantee for the elderly or an allowance for persons with a disability. These people do not have to apply for an IR but the IR status is granted automatically. Also children in a specific vulnerable position (i.e. a child with a recognized handicap of at least 66%, foreign youngsters without parents and orphans) are automatically entitled to the IR. In the second scenario, clients have to file an application and are subjected to an investigation of their household income at a local health insurance office. During the application process, the income of the previous calendar year is taken into account. All taxable income of the applicant, the cohabiting partner and their dependents are taken into account. When the gross taxable household income of the applicant falls below a certain threshold (20,292.59 euros for an application in 2022 increased by 3,756.71 euros per additional household member), the applicant will be granted the IR status. In some cases, current income is taken into account rather than income of the previous calendar year. This applies to beneficiaries of some social benefits, as well as single parent families and people contacted by their health insurer as part of the so-called proactive flux (see below)<sup>21</sup>. We simplify the simulations by only looking at yearly income in 2019 for assessing eligibility of IR, for all potential beneficiaries regardless of whether in practice the incomes of the previous year or current income would be taken into account. There are no age, nationality or residence conditions that determine eligibility for the IR. Once the IR is approved, the right is retrospectively applied from the first day of the month or quarter of application

<sup>21</sup> RIZIV, [https://www.riziv.fgov.be/nl/themas/kost-terugbetaling/financiele-toegankelijkheid/Paginas/verhoogde-tegemoetkoming-betere-vergoeding-medische-kosten.aspx#Geniet\\_u\\_geen\\_van\\_die\\_sociale\\_uitkeringen?\\_Dien\\_dan\\_een\\_aanvraag\\_in\\_bij\\_uw\\_ziekenfonds](https://www.riziv.fgov.be/nl/themas/kost-terugbetaling/financiele-toegankelijkheid/Paginas/verhoogde-tegemoetkoming-betere-vergoeding-medische-kosten.aspx#Geniet_u_geen_van_die_sociale_uitkeringen?_Dien_dan_een_aanvraag_in_bij_uw_ziekenfonds) (last accessed 3/12/2022).



onwards. If the applicant is granted the right to the IR, the partner of the applicant and dependent persons also automatically receive the IR statute.

**Table 12. Eligibility conditions for the increased reimbursement and operationalization in TAKEMOD**

Increased reimbursement (BRV)	Data source	Taken into account?
Household composition	Survey	
<b>Eligibility category 1:</b> entitled to specific benefits	Administrative	
<b>Eligibility category 2:</b> insufficient means	Administrative	
Income/means condition:		
Labour market income	Administrative	
Replacement income	Administrative	
Income from immovable assets	Administrative	
Income from movable assets	Administrative	
Income from assets transfers	Administrative	
Income from partner and dependent persons	Administrative	

To simulate eligibility for the increased reimbursement in TAKEMOD we almost exclusively make use of administrative data (see Table 13). In particular, we make use of data of the FPS Finances, obtained from people's tax declaration, as this is the same information that is used in reality to determine applicants' means. We only use survey information to determine people's **household situation**. More in particular, the household concept that is taken into account for the assessment of eligibility for the IR differs from the administrative/fiscal household concept. In the "IR" household, the partner is defined as legal or non-legal spouse with whom the potential beneficiary lives and with whom he forms a de facto family. In the fiscal household, only legally cohabiting persons are considered as official partners. Therefore, instead of identifying the partner of the application on the basis of administrative data (the National Registry or IPCAL data), we use the data of the survey to reconstruct actual, rather than official households. This is important as also the income of non-official/legal partners is taken into account in the means-test, together with the incomes of both official and non-official cohabiting adult household members.

The **incomes** taken into account in the means-test include all gross taxable income sources. This refers to the incomes before the income tax and any deduction, reduction or exemption. The income sources taken into account include employment income, self-employment income, replacement incomes, pensions, immovable assets, movable assets and miscellaneous (including income from abroad). In TAKEMOD all these income sources are added in the total income concept on the basis of IPCAL data (see Table 14.)

**Table 13. Resources included in II\_MeansBrvY**

+	YEMRV	Employment income (source: IPCAL)
+	YSERV	Self-employment income (source: IPCAL)
+	BSS03	Replacement income (social security: benefit and pensions) (source: IPCAL)
+	YPRRV	Property income (source: IPCAL)
+	YPTRV	Private transfers (source: IPCAL)
+	XMP	Maintenance payments (source: IPCAL)
+	YIYGLTX	Investment income (source: IPCAL)
+	YOTRV	Other income (source: IPCAL)

### 3.3.4. Heating allowance

The heating allowance is an allowance for persons who are in a financially difficult situation and heat their homes with certain types of fuel, such as heating oil and propane gas (natural gas is excluded). If one qualifies for the heating allowance, the Social Heating Fund will partially intervene in the payment of the heating bill. The maximum allowance per household and per calendar year is 300 euros (for deliveries before July 1, 2022, the maximum amount was recently greatly increased). To receive the heating allowance, one must file an application at the PCSW of the municipality in which one lives. The PCSW then verifies that the person meets all the conditions. In addition to the condition of heating the home with a certain type of fuel, an income test will verify whether the person is in a financially difficult situation. For this purpose, the annual gross taxable income of the household is compared to a limit of 21,179.16 euros (increased by 3,920.94 euros per dependent person) (amounts of 2022). In addition, the non-indexed cadastral income of any real estate not being the family home is taken into account. The PCSW uses administrative income data from the FPS Finance to verify the income condition, but may ask applicants to provide additional documents or information themselves. When all members of the household have the increased reimbursement statute, no income test takes place. For individuals who are in process of debt counselling or collective debt settlement, an alternative assessment method will be used to verify whether or not they are able to pay their heating bills.

**Table 14. Eligibility conditions for the heating allowance and operationalization in TAKEMOD**

Heating Allowance (BHA)	Data source	Taken into account?
Household composition	Survey	
Heating condition	Survey	
Eligibility category 1: entitled to specific benefits	Administrative	
Eligibility category 2: in debt counselling	(Survey)	Not able to take into account
Eligibility category 3: insufficient means	Administrative	
Income/means condition:		
Labour market income	Administrative	
Replacement income	Administrative	

Income from immovable assets	Administrative	
Income from movable assets	Administrative	
Income from assets transfers	Administrative	
Income from partner and dependent persons	Administrative	

To operationalize the eligibility conditions for the heating allowance in our simulation model, we make use of a combination of survey and administrative data (see Table 15.). To operationalize the **housing composition**, we make use of information about household composition from the survey as this represents better the actual composition of the household in comparison with administrative data.

We also make use of survey data for verifying the **fuel condition**. As no administrative data exist on the way households heat their house, it would be impossible to determine eligibility for the heating allowance on administrative data only. Therefore, we collected information on the fuels used for heating in the TAKE survey.

To operationalize the other eligibility criteria for the heating allowance, we make use of administrative data from IPCAL. To determine whether someone is entitled to the heating allowance, on the basis of receiving already another right, administrative data are used. Also to assess the **household means** we rely completely on administrative data from IPCAL as well. More specifically, in accordance with legislation, non-indexed cadastral income of all the properties of the household is multiplied by three, so as to take income from immovable assets into account. The income concept created in TAKEMOD is shown in the table below.

**Table 15. Resources included in II\_MeansBhaY**

+	YEMHAMN	Employment income (source: IPCAL)
+	YSEHAMN	Self-employment income (source: IPCAL)
+	BSSHAMN	Replacement income sources (social security: benefit and pensions) (source: IPCAL)
+	YPRHAMN	Property income (source: IPCAL)
+	YPRKGHAMN	Property income: capital gains (source: IPCAL)
+	YIYHAMN	Investment income (source: IPCAL)
+	YIYKGHAMN	Investment income: capital gains (source: IPCAL)
+	YMPHAMN	Maintenance payments (source: IPCAL)

### 3.3.5 Simulation and measurement errors

The biggest challenge in calculating non-take-up is simulating correctly who is eligible for a benefit. Therefore, the accuracy of the estimates depend heavily on the extent to which all eligibility conditions can be correctly programmed into our model and the availability and quality of the underlying data. The TAKE project has allowed us to make important steps forward in estimating non-take-up in Belgium. Nevertheless, it is important to point out some limitations that warrant caution when interpreting our figures.

First, even though the TAKE data contain more information than the usual databases used for estimating non-take-up in Belgium, they are not complete. For instance, we lack administrative data for unofficial household members, we sometimes miss interviews for additional household members

and a number of variables suffer from item non-response. In addition, the reliability of some variables is difficult to verify, for example for questions on movable and immovable assets.

Second, we cannot account for rapidly changing circumstances and fluctuations in the income of respondents in the sample, because we work with aggregated annual income data. Consequently, it is possible that individuals who received a benefit perfectly legitimately during a period without income may be erroneously considered by us as not entitled because their average monthly income exceeds the eligibility threshold. Such a situation is an example of what the literature calls a type-2 error or "beta-error". This may be due to an administrative error (in this case the person is effectively ineligible) or a simulation error in the model (and in reality the person is eligible). Since the data do not allow us to verify the extent of administrative errors and given the complexity involved in calculating non-take-up, the second explanation is probably the most plausible.

As regards the TAKE estimates for 2019, type-2 errors are at 5%-6% for the Increased Reimbursement, about 14% for the Heating Allowance, at about 18% (mild model) and 29% (strict model) and 29% for IGE. In other words, of all individuals effectively receiving IGE, TAKEMOD predicted that these individuals were not eligible. Such high type-2 errors somewhat higher than, but broadly in line with other estimates of non-take-up of social assistance schemes in Belgium (e.g. Bouckaert and Schokkaert, 2011) and elsewhere in Europe (e.g. Bargain *et al.*, 2012; Frick and Groh-Samberg, 2007). In our study, the mismatch of monthly versus annual data is likely a key explanation for the high type-2 error for SIA and IGE. For the Increased Reimbursement and Heating Allowance, a possible explanation could be that for these measures the entitlement is granted annually, while changes in household income can occur in the meantime. However, overall type two errors for these benefits can be considered low, in particular in the case of the Increased Reimbursement.

The implication of these beta errors is that the non-take-up estimates presented in this report are most likely underestimates of the real numbers. This is definitely the case in absolute terms: given that we are likely to err on the side of indicating people as not eligible (rather than assigning too many to the category of being eligible), the estimated absolute number of people who do not take up their rights is most likely an underestimate of the real number within the TAKE target population. This is definitely the case for the total number of people not taking up these benefits in the total population, given that the TAKE target population consists only of a part of those who are eligible for the benefits under study.

### **3.4. Field experiment**

One of the objectives of the TAKE Project is to gain more empirical evidence on effective strategies to reduce NTU in the future. In particular, in the project, we test the effect of proactively contacting potential beneficiaries on the uptake of the Increased Reimbursement (IR). To do so, we organized a large-scale randomized field experiment in collaboration with the National Alliance of Christian Mutualities (NACM), the largest non-profit health insurer (or so-called "sickness fund" or "mutuality") in Belgium (for full details on this study, see Van Gestel *et al.* (2022)).

Within the Belgian Health Insurance, people living in low-income families with an income below a certain threshold can be eligible for the Increased Reimbursement, after which they pay lower co-payments. For people for whom sufficient information is available from administrative data, IR is assigned automatically. For others, a means test by their health insurer is required. Some years ago, health insurers and policy-makers considered that take-up of IR by this latter group was very low.

Therefore, the Royal Decree of January 15<sup>th</sup>, 2014 stipulated that potential beneficiaries of IR should be contacted proactively and be invited to file an application with their health insurer. Before, potential beneficiaries were informed in a more ad-hoc manner by health insurers, providers of health care and social workers, or more indirectly by word of mouth, and national or local news. The Decree mandated a new data flow between health insurers and the federal tax administration, coined the ‘proactive flux’. The health insurers had to provide the tax administration with a list of households who did not benefit from IR. Subsequently, the tax administration indicated which of these households had a taxable income that was below the threshold for IR eligibility in 2013. This information was then relayed back to the relevant health insurers, who had to contact all those with an income below the threshold, to inform them about their potential eligibility for IR. To soften the workload for its local offices, NACM decided to contact households in six mailings over the course of 18 months. This gave us the opportunity to set up a field experiment to assess the impact of this outreach effort (without affecting the speed with which potential beneficiaries would be contacted). To this end, we agreed with the NACM that we could assign potential beneficiaries randomly to the six mailings.

The Royal Decree did not stipulate how health insurers should contact potential beneficiaries. Furthermore, while a common method was approved, NACM’s regional departments were free to deviate from this common approach. Therefore, our focus was on evaluating the total effect of the outreaching activity organised within the context of the Royal Decree. All households in the intervention group received the same basic intervention, consisting of a letter and a flyer, both sent by regular mail. There was some variation, though, with some people also receiving an email (with the same information), and some were additionally being called by phone. Therefore, we evaluate the total impact of the intervention.

In total, 55,407 household heads representing 92,312 household members were included in our study. All these 55,407 households were randomly assigned to one of six mailings spread over 18 months. To reduce sampling error and improve the allocation of households to intervention and control groups, household heads were stratified by age and postcode. Also, to avoid direct contamination through “household” network effects, we allocated all people living on the same address to the same mailing (except for addresses with more than five persons to be contacted). Members in the intervention group were contacted first. Therefore, the intervention group consisted of the first three mailings, the control group of the last three, and we measured take-up of IR in all groups before the last three groups were contacted.

## 4. RESULTS

### 4.1 Non-take-up of social benefits

#### 4.1.1. The size and characteristics of non-take-up in Belgium<sup>22</sup>

Non-take-up of social benefits is an understudied phenomenon in Belgium. There are no reliable estimates of non-take-up of the key means-tested benefits in Belgium. Existing surveys are not sufficiently detailed, they lack key information for assessing eligibility and are also subject to misreporting of income. Similarly, available administrative records typically do not contain all the information that is used in real life when assessing eligibility. In this section we discuss new empirical evidence on the non-take-up of social benefits in Belgium. In particular, we examine the size and basic characteristics of non-take-up of four social programmes targeted at people living on a low-income: the (equivalent) Social Integration Allowance (SIA)<sup>23</sup>, the Income Guarantee for Elderly people (IGE)<sup>24</sup>, the Increased Reimbursement of health care (IR)<sup>25</sup> and the Heating Allowance<sup>26</sup>. Below we discuss the results of each benefit separately. For the increased reimbursement and heating allowance, we discuss the results separately for the population at active age and above 65 years old in Belgium.

##### 4.1.1.1 (Equivalent) Social Integration Allowance

In Belgium, the (equivalent) SIA serves as the final structural safety net for those with limited resources. Those entitled to an (equivalent) SIA either receive a financial benefit, subsidized employment (with a wage), or a combination of the two. To receive an (equivalent) SIA, one must file an application at the Public Centre of Social Welfare (PCSW) of the municipality in which one lives. The social workers working at PCSW will verify whether the applicant is entitled to social assistance and will determine the amount of the benefit and appropriate employment trajectory. To be eligible for SIA, one should be of age (18 years or older, or married, or with dependent children); comply with nationality and residence requirements (being either a Belgian citizen, EU citizen, registered foreigner, stateless or recognized refugee and having a legal residence in Belgium), being willing to work (except when one is not able to work because of health or equity reasons), have exhausted all other rights, and have insufficient means to live a decent life. The latter condition is the most important and implies that the applicant is subject to a household-based means test. The means of the applicant and the persons with he/she cohabits are taking into account according to an administrative formula and compared with a threshold, which differs for different categories of beneficiaries: individuals that live together with others; individuals living alone; and individuals living together with at least one dependent person. The maximum, monthly amount awarded is 743,78 for people living together with others, 1115,67 euro for people living alone and 1507,77 euro for people living with dependent persons (amounts in 2022). To verify this condition, the PCSW will carry out a comprehensive social

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<sup>22</sup> The findings in this section relating to people at active age are published in Goedemé *et al.* (2022). We are currently preparing a paper on non-take-up among the 65 plus population in French (Bolland *et al.*, forthcoming). Results for that population group are taken from that paper.

<sup>23</sup> Het (equivalent) leefloon, l'(équivalent du) revenu d'intégration

<sup>24</sup> De inkomensgarantie voor ouderen (IGO), la Garantie de revenus aux personnes âgées (GRAPA).

<sup>25</sup> De verhoogde tegemoetkoming van gezondheidszorgen (VT), l'Intervention majorée (IM).

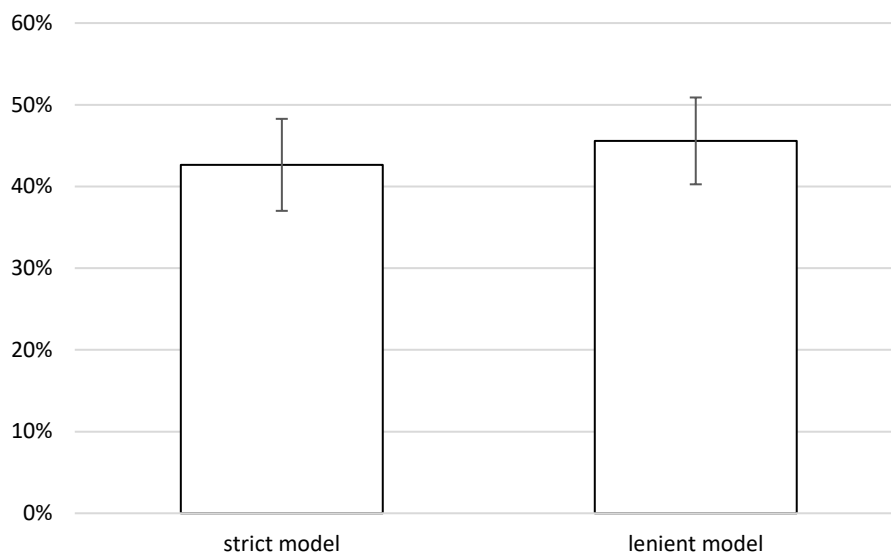
<sup>26</sup> De verwarmingstoelage (niet te verwarren met de stookoliecheque), l'allocation de chauffage (à ne pas confondre avec le chèque mazout).

investigation to identify all available income sources of the applicant. The type of means that are taken into account include employment and self-employment income, replacement income, income from the disposal of goods and any movable and immovable assets of the applicant, his/her/their partner and, depending on the situation and PCSW, cohabiting ascendants and descendants (limited to parents and children).

In December 2019, there were approximately 129,000 households in Belgium where at least one person received the (equivalent) SIA. This corresponds to about 2.6% of all households in Belgium. In our target population of low-income persons between 18-64 year olds, we estimate that in 2019 between 45% and 58% persons were eligible for (equivalent) SIA, regardless of whether or not they actually received SIA. This interval is relatively large because we use two different versions of the simulation model: one in which we take into account the income of cohabiting ascendants and descendants to determine a person's eligibility and entitled benefit amount (the "strict model"), and one in which we do not consider these additional income sources in the means-test (the "lenient" model). In the strict model, the percentage of people entitled to social assistance is six percentage points lower (+/- 49%) than in the lenient model (+/- 55%). Both versions are nevertheless relevant, as the results of a recently conducted survey with responses from about 200 PCSWs in Belgium showed us that there exists a lot of variation among PCSWs in how they take the income of cohabiting ascendants and descendants into account. Moreover, these PCSWs also seem to vary in the extent to which these income sources are taken into account, depending on the situation in which the household finds itself when applying for benefits.

Between 37% and 51% of people at active age in our target population and who were eligible for social assistance in 2019 did not take up their entitlements. Not unexpectedly, the calculated non-take-up rate is somewhat higher for the lenient model (about 46%) than for the strict model (about 43%) (see Figure 4). However, looking at the confidence intervals of our estimates, this is a relatively small difference between the two models. In any case, there is a substantial degree of non-take-up of this important social benefit. In absolute numbers, we estimate that roughly 82,000 adults in the lenient scenario and about 68,000 adults in the strict scenario (with a margin of error of several 10,000s) do not take-up their entitlements, while between 15,000 and 40,000 children (again with a higher number in case of the lenient scenario) live in households where at least one member at active age did not take up SIA. Despite the large margin of error, it is clear that this concerns a large group of people in a vulnerable situation. Moreover, because we work with a very specific target population and therefore exclude some potential beneficiaries with higher incomes who may still be eligible for SIA, the actual number of non-take-up in Belgium is likely to be higher than our figures suggest. At the same time, these estimates do not take account of applicants' willingness to work, which is one of the conditions for receiving SIA. Unfortunately, whether people are willing to work is something that is difficult to assess in a survey in a way that is similar to how it is done by social workers that administer SIA at the PCSWs. An estimate based on some questions on willingness to work in the TAKE survey suggests that non-take-up would be 3.0 to 4.5 percentage points lower if those who do not meet the work willingness requirement were excluded.

**Figure 10. The extent of non-take-up of the (equivalent) SIA, population at active age (18-64 years), 2019**

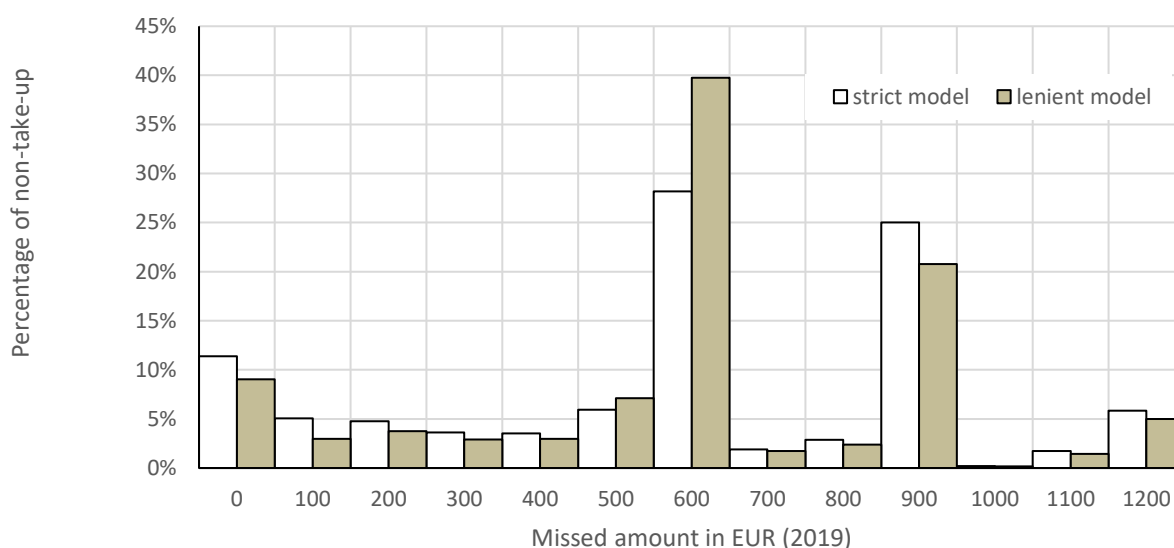


Note: The vertical line at the top of each bar shows the 95% confidence interval.

Source: TAKE Survey, TAKEMOD mixed model, own calculations

Our simulations also provide some more insight into the “missed” amount of income due to the non-take-up of the benefit (see Figure 5). In some 9 to 11% of the cases (depending on which model used), this is about less than 100 euros per month. In these cases, it does not come as a surprise that potential beneficiaries make a consideration whether it is worth applying for a Social Integration Allowance. However, for some 66% (in the strict scenario, and 78% in the lenient scenario) of the adults who miss out on social assistance despite being entitled to it, the amount involved is at least 500 euros per month. There are clear outliers around 620 euros (the 2019 maximum benefit amount for cohabiting persons), around 930 euros (the 2019 maximum amount for a single person), and to a lesser extent around 1,250 euros (the 2019 maximum amount for a person with dependent children). These persons have no income of any kind, and receiving a Social Integration Allowance would make a big difference to them. In Figure 2, it is also notable that in the lenient scenario there are relatively more cohabitants who miss out on social assistance, so the outlier around 600 euros is substantially larger than in the strict scenario.



**Figure 11. Percentage of persons with non-take-up by “missed” amount of benefit (%), active population (18-64 years), 2019**

Source: TAKE Survey, TAKEMOD mixed model, own calculations.

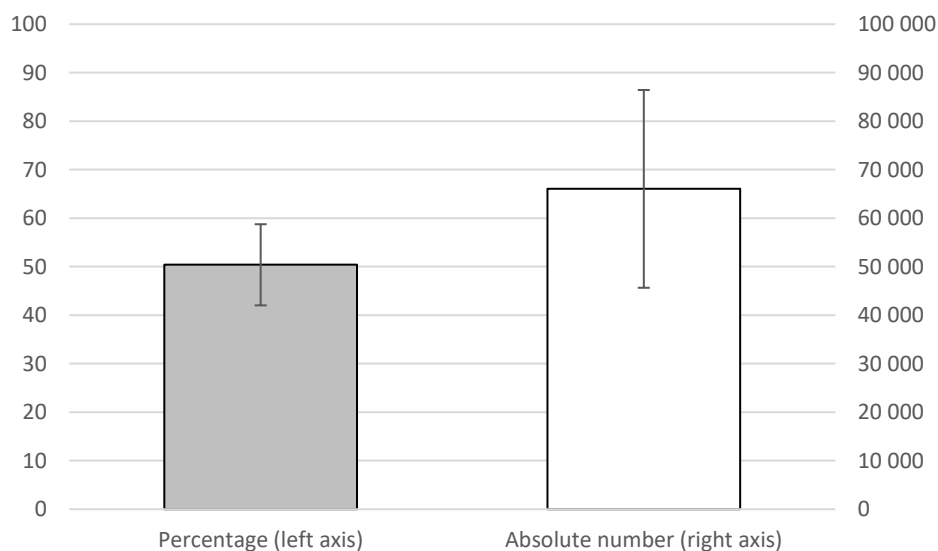
#### 4.1.1.2 The income guarantee for the elderly

The income guarantee for the elderly (IGE) is the main financial benefit for older people who do not have sufficient resources to live a decent life. From the age of 65, IGE can be granted by the Federal Pension Service (FPD-SFP) after an examination of the applicant’s financial means (professional income, social benefits, pension benefits, and income from immovable and movable property) as well as that of the spouse or legal cohabitant living in the same residence. Since 2004, the FPD-SFP conducts an ex officio examination of IGE eligibility (Buysse *et al.*, 2017; Service de lutte contre la pauvreté, 2013a). This means that the means test is automatically carried out when an individual reaches the legal pension age, which is currently 65, and the amount of pension he or she receives is below the IGE threshold (as of 01/07/in 2019, the IGE amount is €747.81 per month for cohabitants and €1,121.72 per month for single persons). The goal of introducing this automatic examination was to reduce the number of IGE non-takers (Schols *et al.*, 2017; Service de lutte contre la pauvreté, 2013a; Van den Bosch and De Vil, 2013). Since 2010, the automatic means test is also performed at the legal pension age for people who retire early (before the age of 65), for people receiving a disability allowance, as well as for those receiving social assistance benefits (Buysse *et al.*, 2017). Finally, individuals who wish to receive IGE can apply to the FPD-SFP. In addition to the means test, applicants must also meet age, nationality, and residency requirements in order to receive IGE<sup>27</sup>. In order to conduct the means test, the FPD-SFP sends an information sheet to be filled in by the potential beneficiary and their spouse or legal cohabitant. They have to provide information on their real estate and movable assets (e.g., savings), and attach the necessary supporting documents (e.g., a copy of the deed of sale). The FPD-SFP first conducts a means test based on the information declared by the person. Then, the declared information can be verified and corrected by the FPD-SFP based on data from the Federal Public Service of Finance (Schols *et al.*, 2017).

<sup>27</sup> See <https://www.sfpd.fgov.be/fr/droit-a-la-pension/grapa#conditions> for more details about eligibility conditions for the IGE (last accessed 2 December 2022).

In December 2019, there were about 86,000 households with at least one person receiving IGE, which corresponds to about 1.7% of households and more than 5% of all households with someone aged 65 or over<sup>28</sup>. In 2019, between 19% and 26% of individuals aged 65 and over in the TAKE target population were entitled to the income guarantee for the elderly. Of these eligible individuals, 42% and 59% did not receive the IGE.

**Figure 12. Non-take-up of the IGE, old population (65+ years), 2019**



Note: The 95% confidence interval are included in brackets.

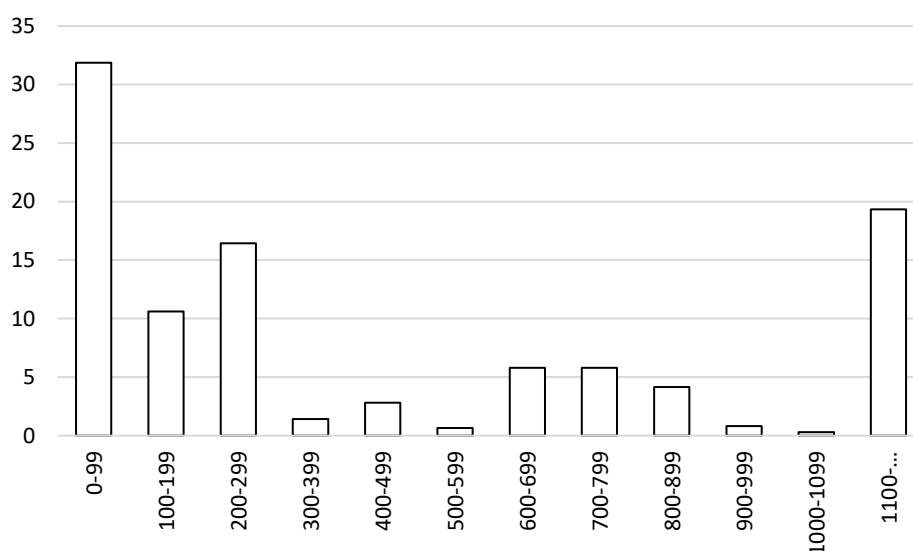
Source: TAKE Survey, TAKEMOD mixed model, own calculations.

This high rate of non-take-up is surprising in view of the previous measures to automate the granting of the IGE that were put in place, first in 2004 and then in 2010, in order to reduce the number of non-users (Buysse *et al.*, 2017; Schols *et al.*, 2017). In absolute figures, the number of people eligible for IGE without taking it up, is estimated to be between 46,000 and 86,000. These high levels of non-recipients raise questions about the effectiveness of the previously introduced automation measures. In any case, it seems that additional initiatives are required to minimise non-take-up of IGE. At the same time, the estimated proportion of non-take-up might be an overestimation of non-take-up in the total population. Given that the TAKE survey targets private households, older people living in nursing homes, hospitals or other institutions are not included in our sample. In a report on social protection in Belgium, the Service de lutte contre la pauvreté (2013b) indicated that the percentage of people receiving IGE was much higher among elderly people residing in institutions (15.7%) than among elderly people living in private households (5.3%). One explanation put forward was that the former group of individuals probably received more help in claiming their rights. The exclusion of people living in institutions from the TAKE target population, could therefore lead to an overestimation of the overall non-take-up rate among the elderly population. However, even if this were the case, in absolute terms our estimate remains an underestimate rather than an overestimate, given that our target population consists of only part of the total population, and there is a relatively large beta error.

<sup>28</sup> Own calculations based on BCSS population data.

One could imagine that people are not inclined to claim IGE if they expect to be eligible to only a relatively low top-up of their income. However, our data show that this can only explain part of non-take-up, and that alternative reasons must therefore also be taken into account. The graph below shows the distribution of the predicted monthly IGE amounts people would receive if they would take up IGE, as a share of the total group not taking up IGE. In 2019, more than 30% of people not taking up IGE were entitled to an amount of less than 100 euros per month. On the other hand, about 35% of non-take-up concerns people entitled to a monthly amount of more than 500 euros. Furthermore, it is noteworthy that population data show that about 28% of IGE beneficiaries do indeed receive a relatively small monthly amount of less than 200 EUR (Federale Pensioendienst, 2019). As a result, other factors must be at play for the relatively high level of non-take-up we find in the case of IGE.

**Figure 13. Composition of those not taking up IGE by the predicted average monthly amount they would receive if taking up IGE, TAKE population aged 65 years and over, 2019**



Source: TAKE Survey, TAKEMOD mixed model, own calculations.

#### 4.1.1.3 The Increased Reimbursement of healthcare

The increased reimbursement (IR) is an important measure to make health care more financially accessible in Belgium. People entitled to IR pay less for their health care, for example for a consultation with a doctor, a hospitalization or for medicines. Furthermore, IR beneficiaries are entitled to the “third-party payer system”, which means that for consultations with the general practitioner, they only have to pay the co-payment on the spot while the remaining costs are paid directly by the health insurance fund to the general practitioner (for some time now, the third-party payer system has been expanded to non-IR beneficiaries). In addition, IR beneficiaries benefit from a lower out-of-pocket maximum for medical expenses in the Belgian Maximum Billing scheme. Last but not least, IR beneficiaries are eligible for several discounts outside the healthcare sector, including discounts on telephone bills, discounts on fuel prices for electricity and heating, and lower public transport fares. Many local authorities use IR as a shortcut for assigning discounts on local services as well, such as access to the public library, cultural, and sports activities. Following the sharp increases in energy costs at the end of the COVID pandemic, and as a result of the war in Ukraine, additional discounts on energy prices have been assigned to IR beneficiaries. As a result, both IR’s visibility and its direct financial

benefit have increased a lot since 2019, the year on which we focus in this section. It is likely that non-take-up has been reduced since then, although it is hard to know to what degree.

Eligibility for the increased reimbursement is determined in two ways: as a derived right (i.e. passported benefit) or by passing an income test. In the first scenario, people are entitled to the IR because they already receive another kind of benefit, including the (equivalent) Social Integration Allowance (for at least 3 months), the Income Guarantee for Elderly people, or an allowance for people with a disability<sup>29</sup>. In these cases, the IR status is, at least in principle, granted fully automatically, without any intervention by beneficiaries. In the second scenario, citizens have to file an application and are subjected to a means test at a local health insurance office. During the application process, the income of previous year, or the current year (depending on the situation of the claimant) will be taken into account. When the gross taxable household income of the applicant falls below a certain threshold (20,292.59 euros in the previous calendar year for an application submitted in 2022, increased by 3,756.71 euros per additional household member), the applicant will be granted the IR status.

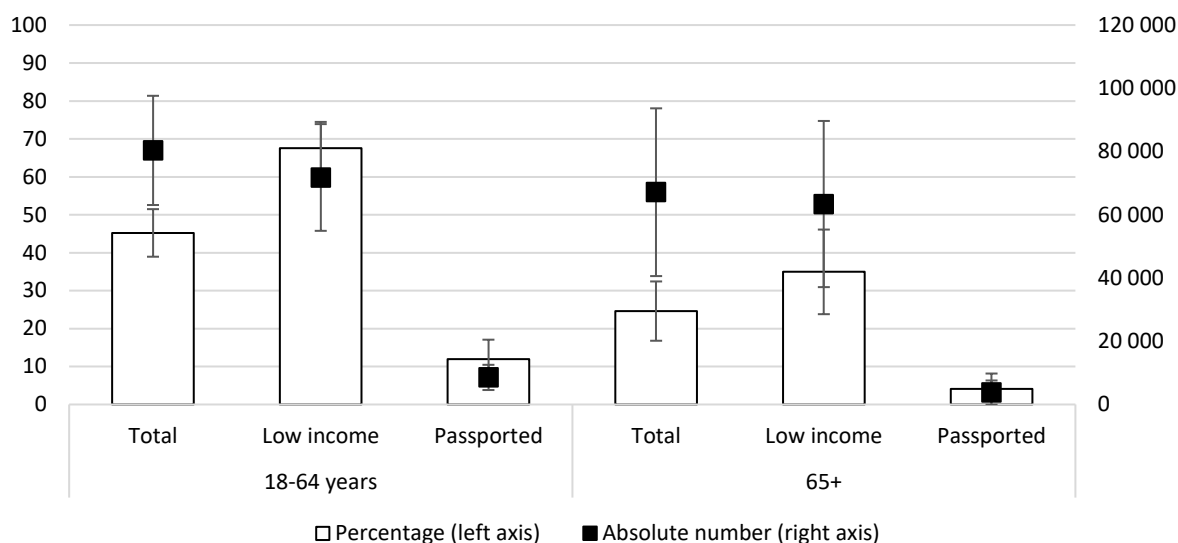
In 2019, there were about 1,075,000 households in Belgium with an increased reimbursement (including households with persons aged 65 and older), which corresponds to almost 22% of all households in Belgium. 45% of these households were granted the increased reimbursement as a passported benefit. Within the TAKE target population for people at active age (18-64 years), between 73% and 81% of the 18-64 year olds were estimated to be entitled to an increased reimbursement in 2019. In this group, the non-take-up rate is situated between 39% and 52% with a reference value of 45%. In absolute numbers, approximately 80,000 people at working age within our target population did not receive IR, despite being eligible for it. In addition, between 22,000 and 42,000 children lived in a household where at least one adult was entitled to the IR without actually receiving it. As regards the population of people aged 65 and over, between 44% and 59% of the elderly with the TAKE target population were entitled to the increased reimbursement in 2019. The non-take-up rate among this group of eligible persons was between 17% and 32%, which corresponds to between 41,000 and 94,000 individuals aged 65 years old or above. When interpreting these numbers, please keep in mind that a different income threshold is used for delineating the target population for people at active age and those aged 65 and over. Therefore, the numbers are not directly comparable. However, as was also the case for IGE and SIA, the absolute number of people not taking up IR is most likely an underestimation of the real numbers in practice. This implies that in spite of various efforts to automate take-up of IR in the past (Lefevere *et al.*, 2019; Van Gestel *et al.*, 2022), an important share of non-take-up remains.

Have these efforts been in vain? Far from it, as can be observed from the graph below. The level of non-take-up among those who receive IR as a passported benefit is, quite understandably, only a small fraction of the level of non-take-up among those who are eligible due to their low income. Moreover, as can be seen from the absolute numbers in the graph, non-take-up of IR is nearly entirely concentrated among the latter group.

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<sup>29</sup> Also children with a recognized disability of at least 66%, unaccompanied children of foreign nationality and orphans are automatically entitled to the increased reimbursement.

**Figure 14. The extent of non-take-up of the increased reimbursement by way of obtaining the benefit, active population (18-64 years) & old population (65+ years), 2019**



Note: The vertical lines represent a 95% confidence interval.

Source: TAKE Survey, TAKEMOD mixed model, own calculations

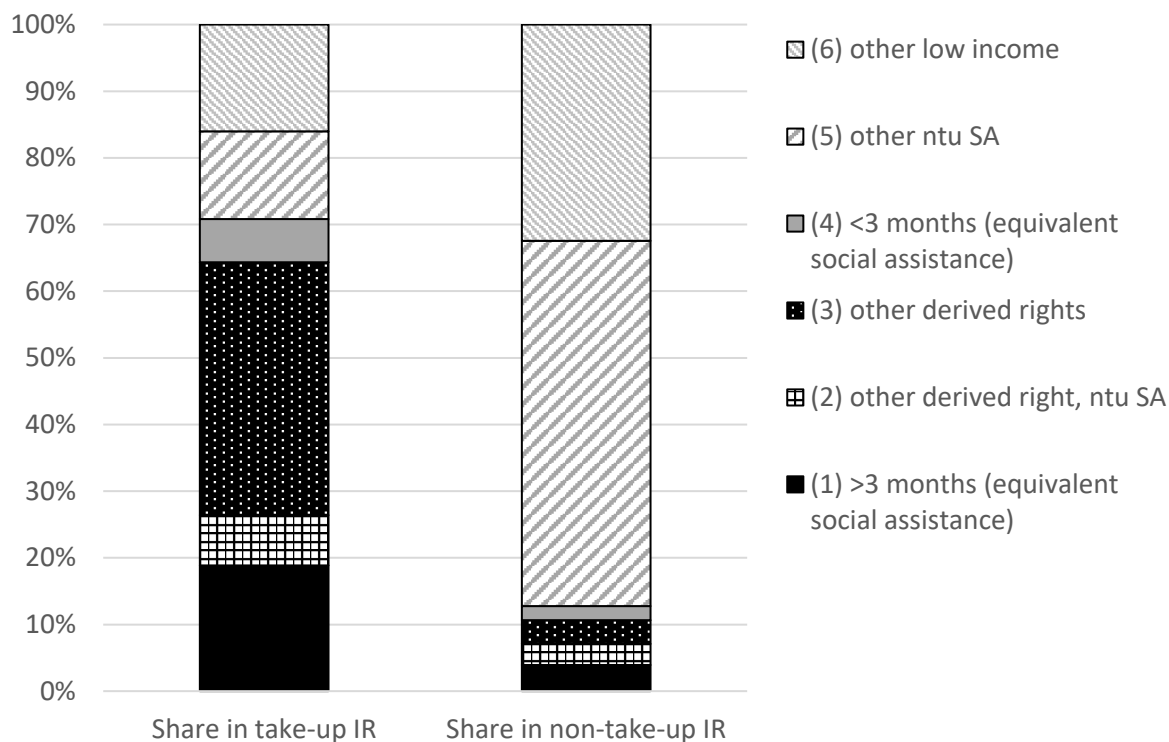
This observation raises two questions. First, how much non-take-up of the increased reimbursement can be avoided by reducing the non-take-up of social assistance benefits, notably SIA and IGE? Second, to what extent do people who do not take up social assistance/income guarantee for the elderly still benefit from the increased reimbursement? The latter is not unlikely because (1) for the increased reimbursement, regularly a proactive check is organized to inform and encourage potentially beneficiaries of the IR to file an application; and (2) the hurdles for applying for the IR are lower in comparison with those for social assistance benefits, due the specific nature of the scheme, the more widespread use of the scheme, the less invasive means-test, and the absence of a work willingness requirement.

The figure below provides more insight into the first question for the population at active age. In this figure, we divide the persons, aged 18 to 64 in our target population and entitled to the increased reimbursement into six groups, according to whether they have the IR status or not. The first three groups are entitled to IR as a derived right (black bars, groups (1), (2) and (3)), the other three groups are entitled based on having a low income (greyish bars, groups (4), (5) and (6)). Although not shown in the figure, these figures are surrounded by relatively large confidence intervals. Among those who do not obtain the Increased Reimbursement despite being entitled to it (bar at the right hand side), somewhat more than half also do not take-up (equivalent) SIA despite being entitled to it (group (2) plus group (5)). This suggests that in our target population, non-take-up of the IR could substantially be reduced by reducing non-take-up of the Social Integration Allowance.

At the same time, a better coordination between health insurers and PCSWs could potentially also reduce non-take-up of the Social Integration Allowance. After all, we observe that in our target population, 20% of those who obtained the IR, are also entitled to (equivalent) SIA, without taking it up (groups (2) plus group (5) in bar at the left hand side). While in total this may be a relatively small fraction of those receiving IR, it amounts to between 20% to 35% of non-take-up of SIA. As a result, it

seems worthwhile to set up a system for identifying those who are potentially eligible for SIA among beneficiaries of IR.

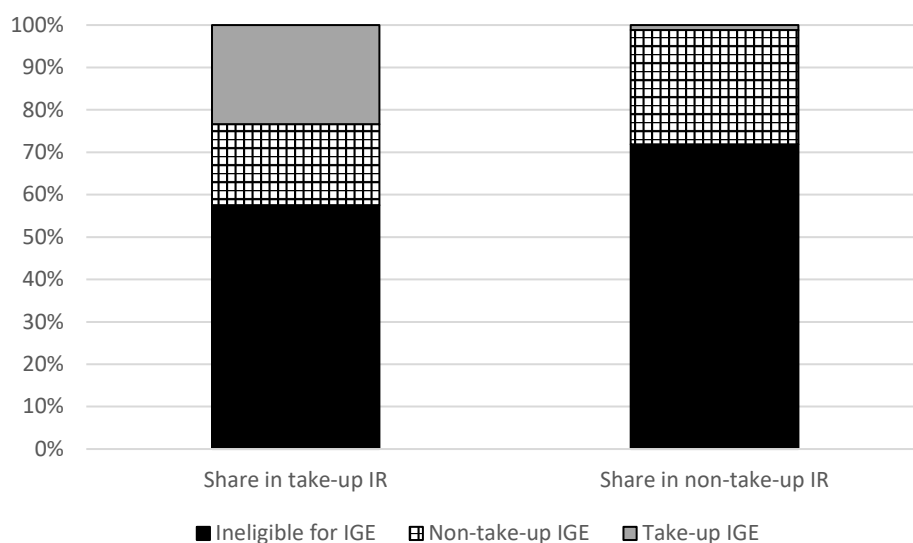
**Figure 15. The proportion of take-up and non-take-up of (equivalent) social assistance, in the group taking and not taking up the increased reimbursement (IR), 18-64 year olds, 2019**



Source: TAKE Survey, TAKEMOD mixed model, own calculations.

Similar conclusions can be drawn for those aged 65 and over. As can be seen from the bar at the right hand side in the figure below, about one quarter of non-take-up of IR in TAKE’s target population could be avoided by a full take-up of IGE. This figure is substantially lower than the one found in relation to non-take-up of SIA among those aged between 18 and 64, but it is still a large share of non-take-up of IR. Conversely, we find that about 20% of those receiving IR, are also eligible for the Income Guarantee for Elderly people, without actually taking up this benefit. This corresponds to 60% of those not taking up IGE, in spite of being eligible for it. In other words, also in this case health insurers could play a positive role in reducing non-take-up of IGE among beneficiaries of IR.

**Figure 16. The composition of the groups taking up and not-taking up IR, by IGE status, population aged 65 and over, 2019**



Source: TAKE Survey, TAKEMOD mixed model, own calculations.

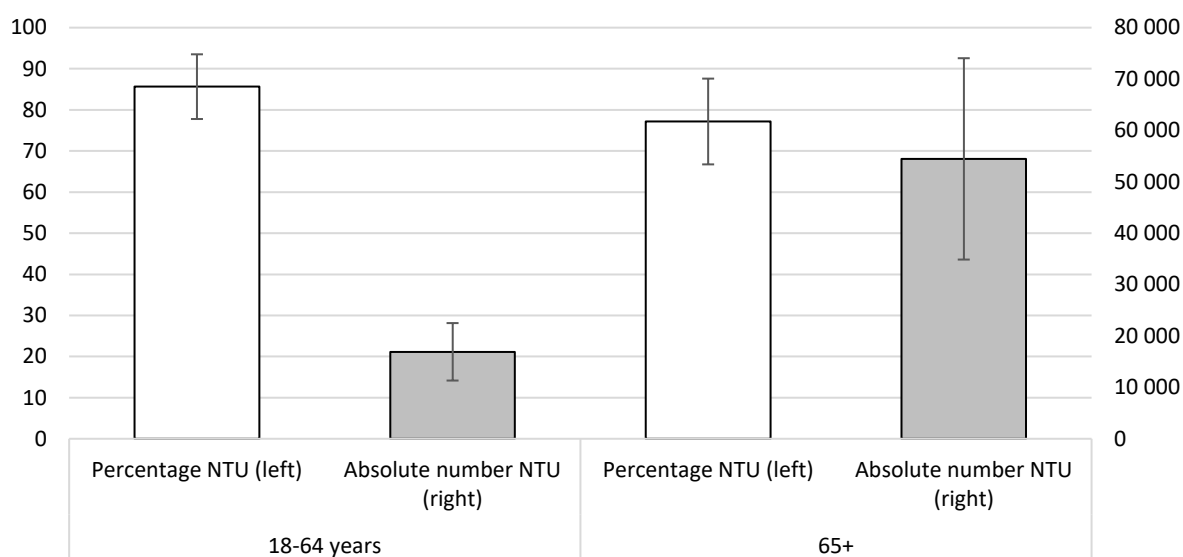
#### 4.1.1.4 The heating allowance

The heating allowance is an allowance for persons who are in a financially difficult situation and heat their homes with certain types of fuel, such as heating oil and propane gas (natural gas is excluded). If one qualifies for the heating allowance, the Social Heating Fund will partially intervene in the payment of the heating bill. The maximum allowance per household and per calendar year is 300 euros (for deliveries before July 1, 2022, the maximum amount was recently greatly increased). To receive the heating allowance, one must file an application at the PCSW of the municipality in which one lives. The PCSW then verifies whether the person meets all the conditions. In addition to the condition of heating the home with a certain type of fuel, an income test will verify whether the person is in a financially difficult situation. For this purpose, the annual gross taxable income of the household is compared to a limit of 21,179.16 euros (increased by 3,920.94 euros per dependent person) (amounts of 2022). In addition, the non-indexed cadastral income of any real estate not being the family home is taken into account. The PCSW uses administrative income data from the FPS Finance to verify the income condition, but may ask applicants to provide additional documents or information themselves. When all members of the household receive the Increased Reimbursement, no income test takes place. For individuals who are in process of debt counselling or collective debt settlement, an alternative assessment method will be used to verify whether or not they are able to pay their heating bills.

In 2019, approximately 84,000 households received a heating allowance from the Social Heating Fund. When we look at the TAKE target population of low-income households at active age (18-64 years old), we find that in 2019 only between 6% and 11% were eligible for a heating allowance. Within this group, non-take-up is very high. Between 78% and 94% of 18- to 64-years olds eligible for a heating allowance do not receive it. In absolute numbers, this is about 11,000 to 23,000 adults and about 6,000 children living in households where at least one adult does not receive the heating allowance despite being eligible for it. Among those aged 65 and over, between 9% and 18% of the TAKE target population were eligible for a heating allowance. Within this group as well, non-take-up was very high,

between 67% and 88%. In absolute numbers, this corresponds to between 35,000 and 74,000 individuals above the age of 64 not taking up the heating allowance, in spite of being eligible.

**Figure 17. Non-take-up of the Heating Allowance in the TAKE target population, 2019**



Source: TAKE Survey, TAKEMOD mixed model, own calculations.

It is interesting to consider how take-up of the heating allowance relates to entitlement to the increased reimbursement. The (limited) sample we have suggests that entitlement to the heating allowance (independent of effective take-up) in the target population (active population and old population) is almost entirely concentrated within the group already taking up the increased reimbursement. This may be the results of the relatively small sample, or the specific distribution of those who heat their home with heating oil or propane gas. In addition, both the income test and the income threshold for the heating allowance and increased reimbursement are very similar. As a result, both take-up and non-take-up of the heating allowance is completely dominated by people who do receive the increased reimbursement. Only in the group that does not take up the heating allowance, we also observe a small percentage of adults who do not take up the increased reimbursement, usually despite of being entitled to the it.

#### *4.1.1.5 The composition and incidence of non-take-up with respect to some individual and household characteristics*

In this section we briefly explore the composition of those not taking up the means-tested benefits discussed above. In addition, we provide some more insights into which groups are more included to take-up or not take-up these benefits. Both types of information are key when targeting efforts to reduce non-take-up. One may be inclined to primarily focus on groups with high levels of non-take-up. However, if they account for only a small share of those not taking up benefits, it may be more efficient to increase efforts with respect to reducing non-take-up among other groups who account for a larger share of total non-take-up. Therefore, both composition and incidence provide relevant information. The analyses below are ‘simple’ bivariate estimates, which will be explored in much more detail in the next section with respect to the determinants of non-take-up of the Social Integration Allowance. We do not analyse the Heating Allowance in this section, given that the subsample which is eligible for this benefit, is too small for any meaningful analysis.



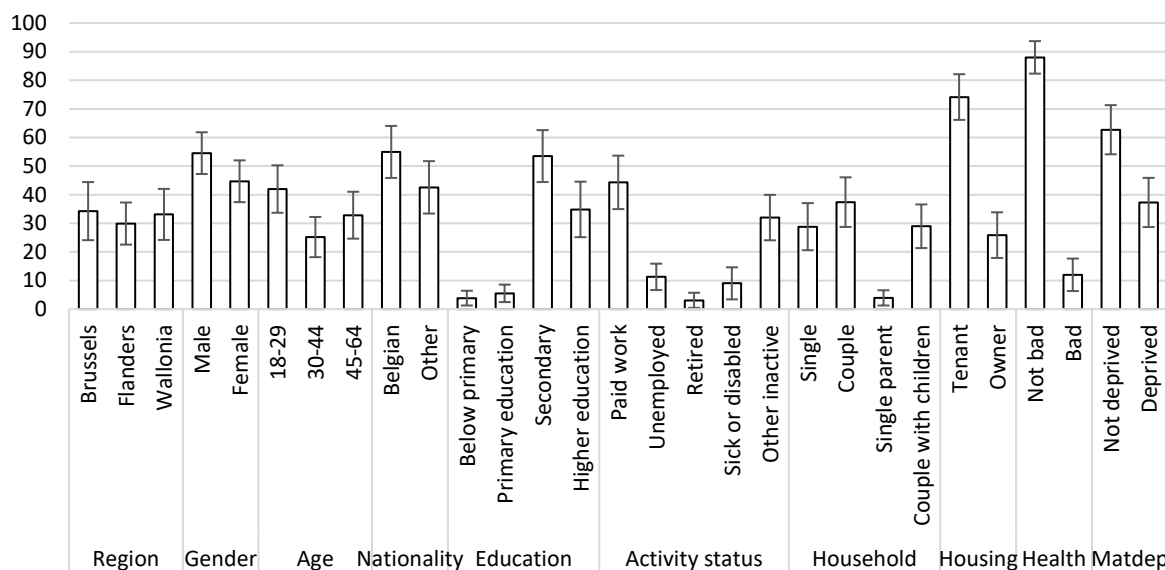
As regards the (equivalent) **Social Integration Allowance (SIA)**, we focus on the lenient model (results for the strict model are very similar). Non-take-up is relatively evenly distributed between the three Regions. In contrast, males have a higher propensity to not take up SIA. Younger adults and older adults (aged over 45) have a higher probability of not taking up SIA. Remarkably, those with higher levels of education have a much higher non-take-up rate in comparison with those with primary education as their highest level of education. Furthermore, about 44% of those who do not take up SIA are in paid work, a group which has a take-up rate of about 70%. With regard to family composition, it is remarkable that single parent families have a very low non-take-up rate. Furthermore, while owners have a very high non-take-up rate (about twice as high as tenants), their overall share in non-take-up is rather low. In other words, this is a group that could be targeted for reducing non-take-up, although the impact on the overall non-take-up rate can be expected to be relatively limited. Finally, it is noteworthy that those with low self-perceived health, and those confronted with material deprivation have lower levels of non-take-up of SIA than those in relatively good health and not in a situation of material deprivation.

Regarding the **Income Guarantee for Elderly people (IGE)**, the following groups have a substantial and significant lower non-take-up rate: people living in Brussels, people aged less than 70, singles, tenants, people with a low self-perceived health status and those who can be considered materially deprived. In terms of composition, specific attention might be paid to non-take-up by females and couples without children. It is noteworthy that while homeowners have a higher probability to not take up IGE, their share of those not taking up IGE is not larger than the one of tenants.

With respect to the **Increased Reimbursement of health care (IR)**, we make a distinction between those aged 65 and over and those aged **between 18 and 64**. As regards the latter group, people living in Brussels stand out as have a relatively high probability to not take up IR. People without Belgian nationality have a higher probability of non-take-up, while accounting for about 20% of non-take-up. Remarkably, there is a strong positive correlation between level of education and probability of non-take-up. Also in absolute terms those whose level of education is secondary or higher, account for the bulk of non-take-up of IR. Furthermore, those in paid employment have a relatively high probability of non-take-up (about 64%), while also accounting for a about half of all those not taking up IR. While home owners have a substantially higher probability of non-take-up than tenants, tenants still account for the large majority of non-take-up of IR. Non-take-up is lower among those who consider themselves to be in bad health. It is also lower among those we can consider as being materially deprived.

Patterns are somewhat different for those **aged 65 and over**. People living in Flanders are more inclined to not take up IR, and account for roughly 70% of non-take-up. While there is no clear difference in levels of non-take-up by age, those aged between 70 and 79 account for the largest share of non-take-up. While those with a higher level of education tend to have a higher level of non-take-up, the pattern is not as outspoken as in the case of those aged between 18 and 64. While couples without children do not have a higher non-take-up rate, they still account for the bulk of non-take-up of IR. We cannot identify a significant difference in take-up rate by self-perceived health or material deprivation status.

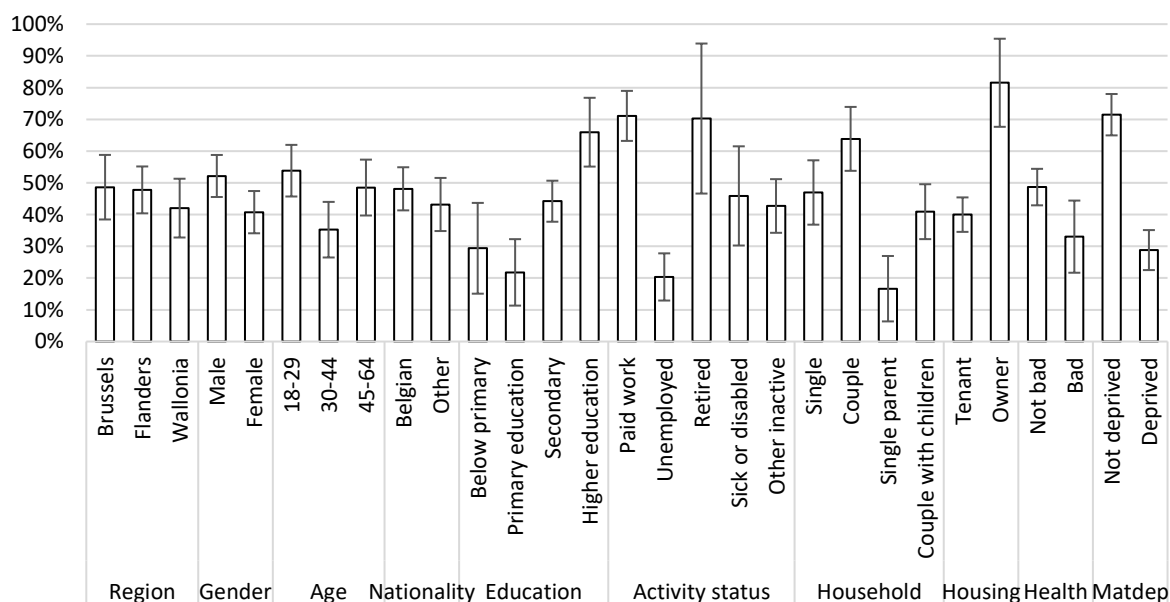
**Figure 18. The composition (%) of non-take-up of SIA among those aged 18 to 64 within the TAKE target population, lenient model, 2019**



Note: Health is self-perceived health. Matdep refers to material deprivation measured with a scale of 9 items. Those deprived in at least 3 out of 9 dimensions are considered materially deprived (cf. Eurostat indicator, see Decancq *et al.* (2014)).

Source: TAKE Survey, TAKEMOD mixed model, own calculations.

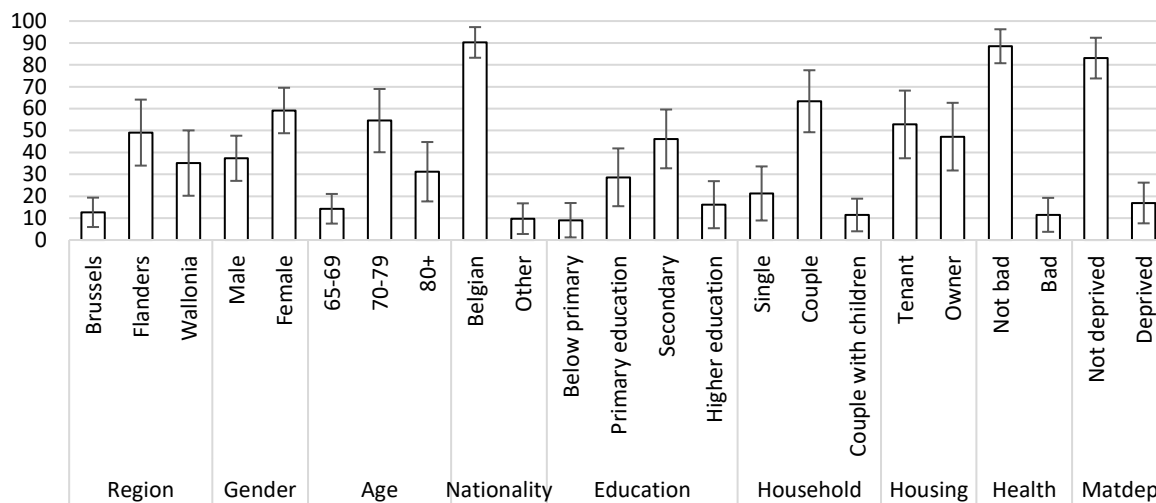
**Figure 19. The incidence of non-take-up of SIA among those aged 18 to 64 within the TAKE target population, lenient model, 2019**



Note: Health is self-perceived health. Matdep refers to material deprivation measured with a scale of 9 items. Those deprived in at least 3 out of 9 dimensions are considered materially deprived (cf. Eurostat indicator, see Decancq *et al.* (2014)).

Source: TAKE Survey, TAKEMOD mixed model, own calculations.

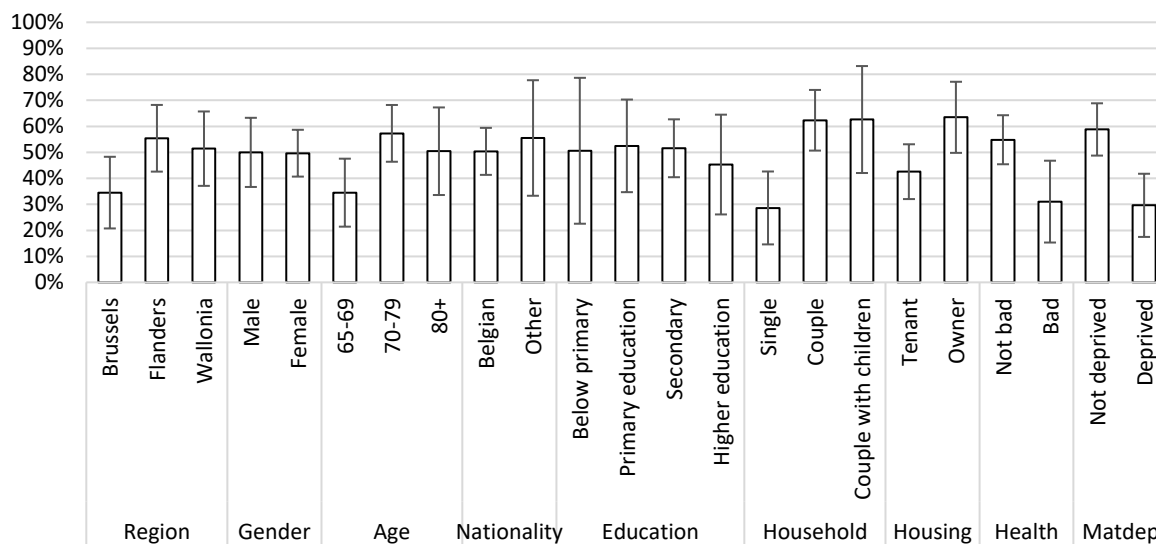
**Figure 20. The composition (%) of non-take-up of IGE among those aged 65 and over within the TAKE target population, 2019**



Note: Health is self-perceived health. Matdep refers to material deprivation measured with a scale of 9 items. Those deprived in at least 3 out of 9 dimensions are considered materially deprived (cf. Eurostat indicator, see Decancq *et al.* (2014)).

Source: TAKE Survey, TAKEMOD mixed model, own calculations.

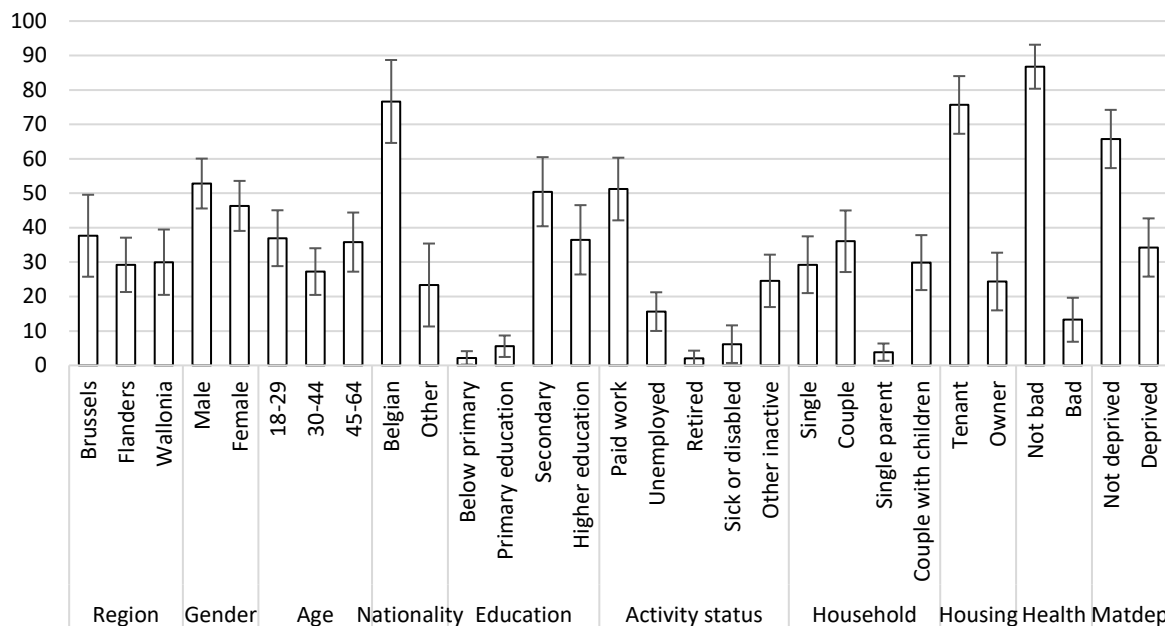
**Figure 21. The incidence (%) of non-take-up of IGE among those aged 65 and over within the TAKE target population, 2019**



Note: Health is self-perceived health. Matdep refers to material deprivation measured with a scale of 9 items. Those deprived in at least 3 out of 9 dimensions are considered materially deprived (cf. Eurostat indicator, see Decancq *et al.* (2014)).

Source: TAKE Survey, TAKEMOD mixed model, own calculations.

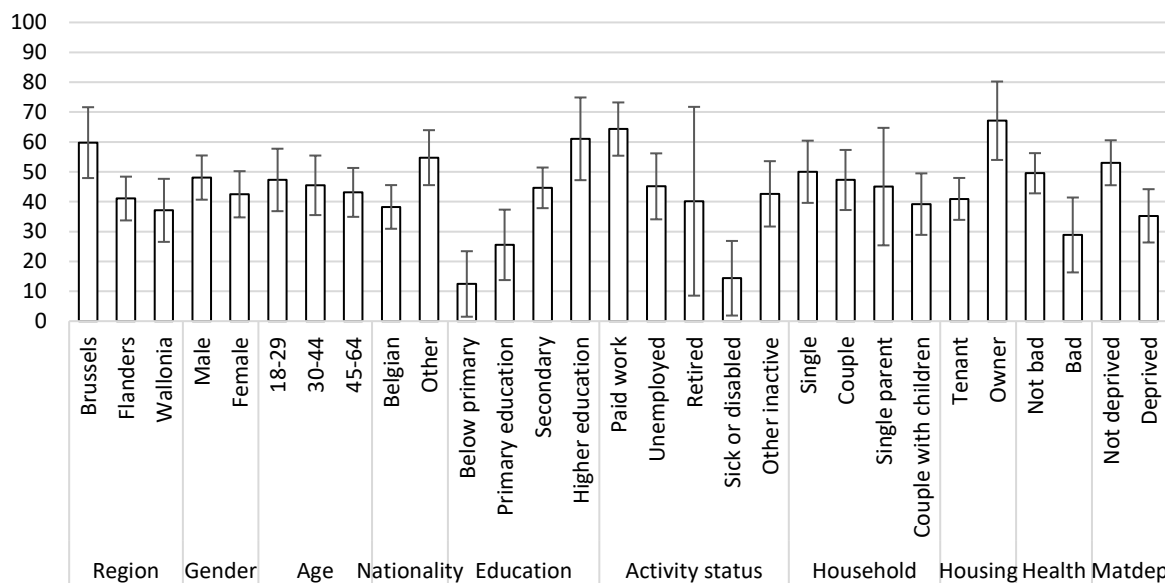
**Figure 22. The composition (%) of non-take-up of IR in the TAKE target population, adults aged between 18 and 64, 2019**



Note: Health is self-perceived health. Matdep refers to material deprivation measured with a scale of 9 items. Those deprived in at least 3 out of 9 dimensions are considered materially deprived (cf. Eurostat indicator, see Decancq *et al.* (2014)).

Source: TAKE Survey, TAKEMOD mixed model, own calculations.

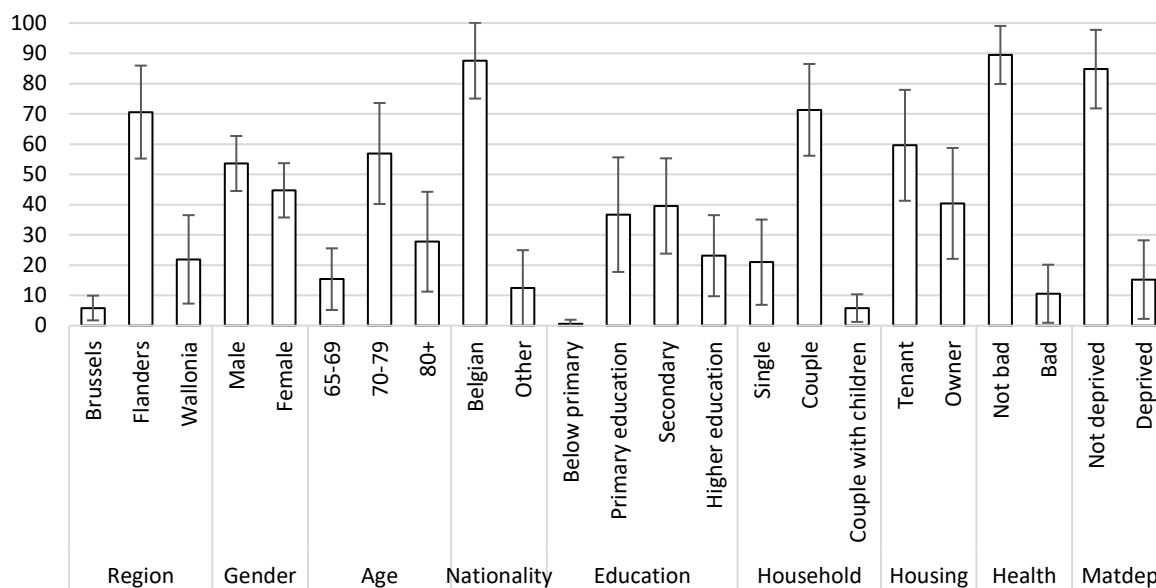
**Figure 23. The incidence (%) of non-take-up of IR among those aged between 18 and 64 within the TAKE target population, 2019**



Note: Health is self-perceived health. Matdep refers to material deprivation measured with a scale of 9 items. Those deprived in at least 3 out of 9 dimensions are considered materially deprived (cf. Eurostat indicator, see Decancq *et al.* (2014)).

Source: TAKE Survey, TAKEMOD mixed model, own calculations.

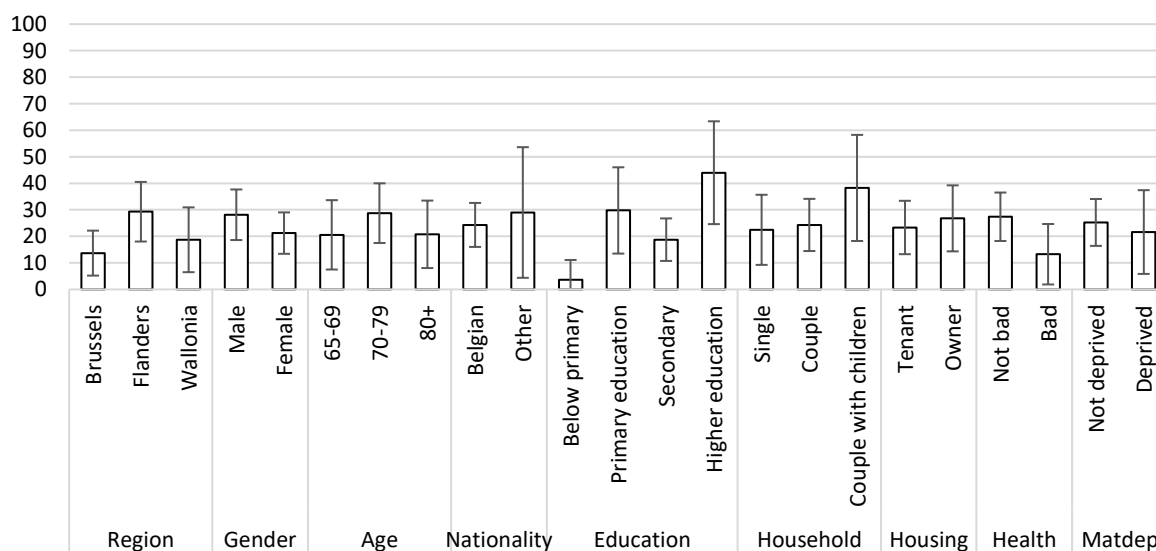
**Figure 24. The composition (%) of non-take-up of IR in the TAKE target population, adults aged 65 and over, 2019**



Note: Health is self-perceived health. Matdep refers to material deprivation measured with a scale of 9 items. Those deprived in at least 3 out of 9 dimensions are considered materially deprived (cf. Eurostat indicator, see Decancq *et al.* (2014)).

Source: TAKE Survey, TAKEMOD mixed model, own calculations.

**Figure 25. The incidence (%) of non-take-up of IR among those aged 65 and over within the TAKE target population, 2019**



Note: Health is self-perceived health. Matdep refers to material deprivation measured with a scale of 9 items. Those deprived in at least 3 out of 9 dimensions are considered materially deprived (cf. Eurostat indicator, see Decancq *et al.* (2014)).

Source: TAKE Survey, TAKEMOD mixed model, own calculations.

#### 4.1.1.6 Targeting efficiency, an illustration

With the TAKE data, it is also possible to study vertical and horizontal targeting efficiency, as well as tertiary non-take-up. As explained in chapter 1, *tertiary non-take-up* can be defined as the degree to which vulnerable people are not entitled to a social provision due to eligibility rules (Van Mechelen and Janssens, 2017a, 2017b). Further, vertical efficiency can be defined as the extent to which transfers are received by the non-vulnerable population, while horizontal efficiency can be defined as the extent to which the vulnerable are protected by or do receive social benefits (cf. Atkinson, 1998: 121-123), the complement of tertiary non-take-up. Importantly, when studying targeting efficiency, it is important to create high-quality indicators of who could be considered vulnerable or in need of support. In this section, we limit ourselves to only one indicator of material deprivation (lacking three out of nine items, cf. Decancq *et al.* (2014)). Furthermore, the TAKE target population does not contain all eligible households, and does not contain the total population of Belgium. Therefore, this section should only be considered an illustration of what is feasible with the TAKE data, not a definite response to questions about the targeting efficiency of the various social benefits under consideration. Targeting efficiency can be studied by assessing the degree to which people in a vulnerable group are (1) not eligible, (2) eligible but without take-up, (3) taking up the benefit under study, and by studying the incidence of vulnerability in each of these three groups. Note that for this analysis, we include all take up under (3), also those who TAKEMOD considers ineligible. Overall, the findings suggest that important groups of vulnerable households remain unprotected by the benefits under study, and that there is some trade-off between horizontal and vertical efficiency.

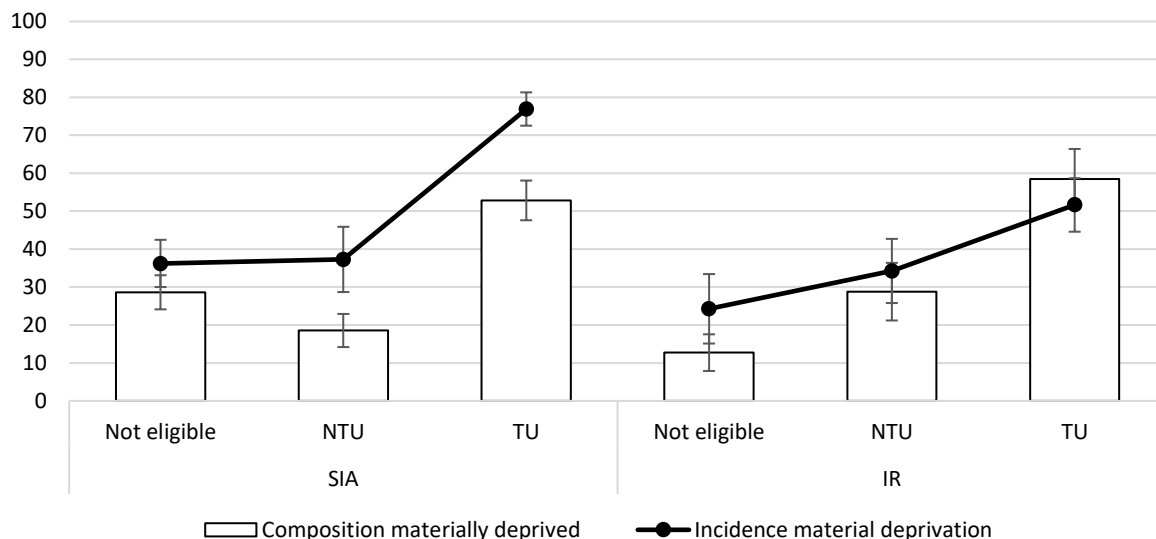
About 50% of those in material deprivation do not receive the (equivalent) **Social Integration Allowance** (tertiary non-take-up, broadly defined), while about 30% do not take up SIA or are not eligible (tertiary non-take-up strictly defined). As a complement, 50% of those who are materially deprived do receive SIA (an indicator of horizontal efficiency). In terms of vertical efficiency, it can be observed that in the case of SIA (only) about 20% of those who do take it up, are not considered materially deprived. This could be considered leakage, although it should be kept in mind that the exact reason for not being materially deprived might be that people do have access to SIA. It is also noteworthy that those who are not eligible within the TAKE target population of low-income households, are not more often materially deprived than those eligible, but not taking up SIA.

In comparison with SIA, and with respect to those aged between 18 and 64 years, the **Increased Reimbursement** has a higher degree of horizontal efficiency (about 60%), and a lower degree of tertiary non-take-up (about 13% in its strictest form and about 40% in its broad form). Vertical efficiency is lower, though, with about 50% of beneficiaries not being in material deprivation. There is a stronger gradient with respect to targeting as compared to SIA, with the level of material deprivation being lower among those not eligible than those eligible for IR.

The same analysis can be repeated for those aged 65 and over within the TAKE target population. Turning to the **Income Guarantee for Elderly people**, horizontal efficiency is about 50%, while tertiary non-take-up is considerable: about 30% of those materially deprived are not eligible, while about 50% do not receive IGE. Vertical efficiency can be considered moderate, in the sense that although a large share of those receiving IGE are not considered to be in a situation of material deprivation, the incidence of material deprivation increases with the degree of access. In contrast, for those aged 65 and over within the TAKE target population, horizontal efficiency of the **Increased Reimbursement** can be considered high, with about 70% of those in material deprivation having IR status. Nonetheless, this comes at a cost of relatively low vertical efficiency, with the large majority of beneficiaries not

being in a situation of material deprivation. Also in this case, it should be kept in mind that the very fact of having IR status can help to reduce the level of deprivation among IR beneficiaries.

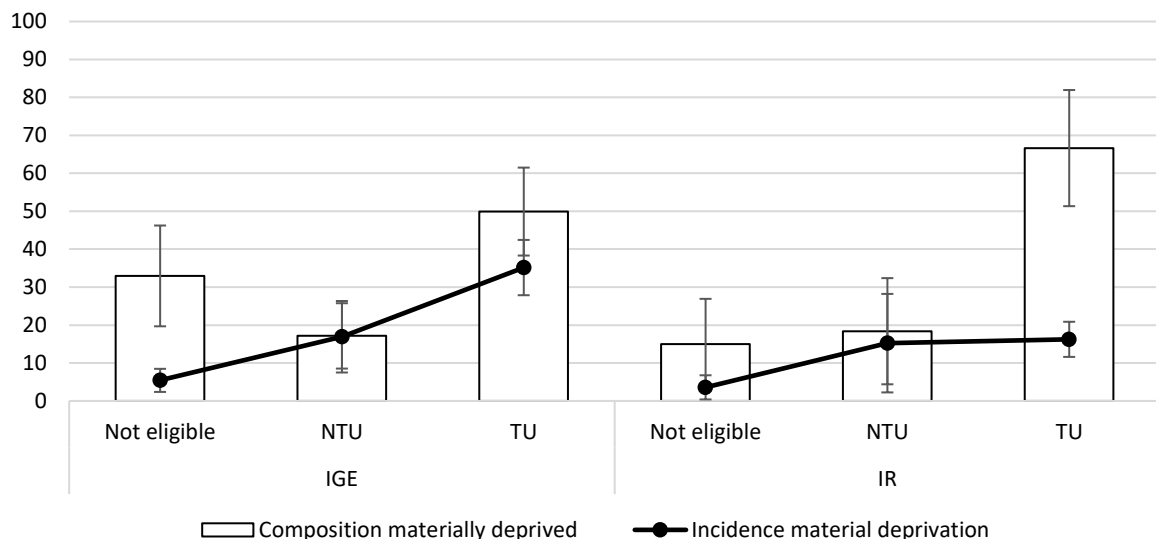
**Figure 26. Illustration of mapping the targeting efficiency of SIA and IR with respect to material deprivation, 18-64 years olds in the TAKE target population, 2019**



Note: NTU = non-take-up, TU = take-up. Material deprivation is measured with a scale of 9 items. Those deprived in at least 3 out of 9 dimensions are considered materially deprived (cf. Eurostat indicator, see Decancq *et al.* (2014)).

Source: TAKE Survey, TAKEMOD mixed model, own calculations.

**Figure 27. Illustration of mapping the targeting efficiency of IGE and IR with respect to material deprivation, population aged 65 and over within the TAKE target population, 2019**



Note: NTU = non-take-up, TU = take-up. Material deprivation is measured with a scale of 9 items. Those deprived in at least 3 out of 9 dimensions are considered materially deprived (cf. Eurostat indicator, see Decancq *et al.* (2014)).

Source: TAKE Survey, TAKEMOD mixed model, own calculations.

#### 4.1.1.7 Conclusion

In the TAKE project, we were able to generate new evidence on the size of non-take-up of some important means-tested social benefits among both the low-income population at economically active age (18-64 years) and old age (+65 year) in Belgium. Our estimates of the extent of non-take-up are based on a combination of administrative data and survey data collected in the TAKE survey. It is the first time in Belgium that a combination of administrative and survey data is used to calculate non-take-up for a broad range of means-tested benefits. When interpreting our figures, it is important to keep in mind that the sample we use is representative for households with a very low taxable income in 2017. This implies that we do not capture the total population of beneficiaries of the benefits we study. As a result, our estimates of the absolute number of people not taking up their social rights, is most likely underestimated. Nevertheless, our results lead to some important insights into the non-take-up of social rights in Belgium.

A first important observation is that the non-take-up of means-tested benefits is (still) a major challenge in Belgium. These levels of non-take-up undermine the effectiveness of the social safety net in protecting people from poverty. For the (equivalent) Social Integration Allowance and increased reimbursement, we find that nearly half of the persons eligible for these benefits in our target population of 18-64 years old do not receive them. For those aged 65 and over, we also find that half of those eligible for the income guarantee for the elderly do not make use of their rights and that a quarter of those eligible for the increased reimbursement do not receive it. As regards the heating allowance, non-take-up rates even rise to about 80% for both age groups. These non-take-up estimates for Belgium are relatively high, but not exceptional, in comparison with non-take-up estimates of social assistance benefits in other countries (Bargain *et al.*, 2012; Fuchs *et al.*, 2020; Marc *et al.*, 2022).

A second observation is that a substantial share of non-take-up of social assistance benefits (SIA and IGE) concerns non-take-up of relatively large sums of money. In the case of the Social Integration Allowance, at least 66% miss out on an average monthly benefit of 500 EUR or more. The same applies to about 35% of those who do not take up IGE in spite of being eligible for it.

Third, patterns of non-take-up vary across socio-demographic groups in the population. This implies that some groups are much more prone to non-take-up than others. While varying levels of non-take-up are important to understand and for targeting efforts with respect to reducing non-take-up, it is essential to keep in mind that a high propensity to not take up benefits, such as among home owners, does not always translate into a large absolute share in those not taking up benefits. Therefore, efforts targeted at reducing non-take-up should also take the composition of groups not taking up benefits into account.

Fourth, in our target population (both active and old population), non-take-up of one social benefit translates into non-take-up of other social benefits. This can create a cascade of non-take-up from social assistance, to the increased reimbursement, and consequently to other benefits (e.g. the heating allowance). A stronger focus on the uptake of benefits that grant access to other benefits and cost-compensating measures, therefore seems to be pivotal if we want to try to close the gaps in the Belgian safety net. At the same time, we also observe that administrative simplification through the creation of derived rights or passported benefits allows for lower levels of non-take-up, in particular when combined with automatic benefit access (cf. below).



In sum, these findings demonstrate that the application procedures for benefits should be kept on being scrutinized and improved to facilitate take-up. A more radical overhaul of the application procedure for the heating allowance seems long overdue. Belgium has already taken some steps to reduce the non-take-up of benefits, mainly by implementing various forms of automating benefit access (e.g. Buysse *et al.* (2017); Lefevere *et al.* (2019); Service de lutte contre la pauvreté (2013a); Van Gestel *et al.* (2022); Van Mechelen and Van der Heyden (2017)). Our results highlight the importance of continuing on this track. For example, it seems useful to examine whether local health insurers could play a more pronounced role in sharing information with their members and PCSWs to reduce both the non-take-up of the (equivalent) Social Integration Allowance and the heating allowance. The information collected in the means-test for the IR, should suffice to target with a sufficient level of precision those who are likely to be eligible for the Social Integration Allowance or the Income Guarantee for Elderly people. Various options could be pursued to make use of this information: either health insurers use this information to inform their members about potential eligibility, or this information is shared with PCWS, respectively the Federal Pension Service, who could then set up a procedure of automatic assessment of eligibility or proactive contacts of the potential beneficiaries. Likewise, with respect to the heating allowance, health insurers could inform their members with an increased reimbursement that if they heat their house with certain types of fuel, they are also entitled to a heating allowance.

Concerning the income guarantee for the elderly, the qualitative analysis of Schols *et al.* (2017) reveal that a change in the situation of the elderly after the legal pension age is one of the main causes of non-take-up of this benefit. Indeed, although not meeting the eligibility requirements for the IGE at the time of retirement, some elderly people may later experience life changes (e.g., changes in household composition, sale of property, etc.) that make them eligible (Schols *et al.*, 2017). The authors suggest that an ex officio means test could be carried out periodically, e.g. every five years, for those who were denied IGE during the first means test at legal pension age in order to reduce non-take-up. Schols *et al.* (2017) also point out that lack of information is another main cause of non-take-up. They explain that information is available online but is not accessible to most older people. To solve the problem of lack of information, the Federal Pension Service could make regular phone calls to inform older people who may be eligible. Alternatively, an information campaign on the right to IGE (with a telephone number to call for more information) could be broadcast on television so that older people can be reached without feeling directly targeted (to reduce potential stigma).

Finally, we illustrated how the TAKE data could be used to study the targeting efficiency of social benefits. While the analysis included in this report can only be considered an illustration, it does show gaps in the protection of those who can be considered materially deprived, both in terms of non-take-up, and in terms of being excluded from receiving any benefit as a result of current eligibility rules.

#### 4.1.2. The household and individual level determinants of non-take-up of the Social Integration Allowance

Despite the apparent universality of non-take-up in different welfare states, our empirical understanding of the reasons behind the massive non-take-up of benefits is still limited. Although various explanations have been put forward in the international literature to explain the non-take-up of benefits, the empirical evidence that exists is often rather limited. The lack of empirical evidence can at least be explained by the fact that even before the determinants of non-take-up can be assessed, it is important to have reliable non-take-up estimates. Indeed, as is also demonstrated by

the TAKE project, measuring non-take-up is associated with a lot of methodological challenges and high data requirements. In addition, specific information on the causes of non-take-up are generally not available in household surveys or administrative sources used to calculate non-take-up figures. As a result, the causes of non-take-up are often measured indirectly, using socio-demographic variables that act as plausible proxies for the barriers applicants face when claiming benefits. In addition, most studies only examine a limited set of potential influencing factors, which can only provide limited evidence of their relevance for explaining non-take-up.

To improve our understanding of the non-take-up of social benefits, in the TAKE project, we investigated the determinants of the non-take-up of the Social Integration Allowance (SIA), i.e. the Belgian social assistance benefit for able-bodied individuals aged between 18 and 64. In particular, we measured individual and household (dis)incentives for taking-up social assistance benefits in a more direct way than is usually done, and evaluated to what extent these are associated with non-take-up of social assistance in Belgium. To this end, we made use of the TAKE survey which was tailored to measuring the size, characteristics and determinants of the non-take-up of several means-tested benefits in Belgium (for the complete analysis, see Janssens *et al.* (forthcoming)).

Our analysis contributes to the existing literature on the causes of non-take-up in several ways. First, we provide some more direct evidence on the determinants of non-take-up by using survey questions and instruments specifically designed to measure the reasons behind non-take-up among low-income families. Furthermore, our analysis is the first empirical study on the determinants of non-take-up of social assistance in Belgium. In our study, possible facilitating and inhibiting factors of take-up are studied in conjunction which allows us to identify their relative strength for explaining non-take-up. This is important, as in order to develop effective interventions to improve the uptake of benefits, it is essential to first identify which factors contribute most to observed levels of non-take-up.

#### *4.1.2.1 Further details on data and methods*

In this section, we identify eligibility and non-take-up by making use of the lenient version of the mixed TAKEMOD model. This model makes use of a combination of administrative data and survey data to simulate eligibility as realistically as possible. This version is lenient, as the resources of adult parents and adult children within the same household are not taken into account for assessing eligibility. This is the situation that most likely occurs in the majority of cases, and this version of the model is associated with a substantially lower degree of beta error than the strict version of the model.

To analyse the determinants of non-take-up of the Social Integration Allowance, we made use of the data collected in the TAKE survey. the TAKE survey examined a wide range of factors that help to better understand the determinants and reasons for non-take-up. In particular, the questionnaire surveyed most important socio-demographics, income and wealth (complementary to the information available from administrative sources), material deprivation and financial scarcity, respondents' experience with applying for benefits, the use and receipt of benefits and social services, barriers associated with claiming benefits, respondents' attitudes towards benefits, self-reported reasons for non-take-up and other relevant factors that may influence the (non-)take- of benefits (i.e. language barriers, transport difficulties, the extent and support of the social network,...). When available, we made use of validated questions and instruments (e.g. the European material deprivation indicator (Decancq *et al.*, 2014) and, a scale of financial stress (Ponnet, 2014)). When validated instruments were lacking, we developed new questions or instruments ourselves. For

example, to measure the information, process, social and psychological costs potential applicants perceive or experience when claiming benefits, we developed and validated a new survey instrument to measure the costs associated with claiming benefits in a more direct way, in contrast to using various socio-demographic proxies.. The new instrument, the Claiming Costs Scale (CCS), consists of 9 Likert-type items which measure the various dimensions of costs that potential and actual beneficiaries face when applying for benefits. The scale has been extensively tested and the results have shown the scale to be a valid and reliable instrument for measuring the costs associated with claiming benefits (see Janssens *et al.*, 2021).

**Table 16. The Claiming Costs Scale**

<b>Construct</b>	<b>Item wording</b>
<b>Information Costs</b>	
<b>IC1</b>	I know the benefits of the Social Integration Allowance
<b>IC2</b>	I have a fairly good idea whether I am entitled to the Social Integration Allowance
<b>IC3</b>	I know the procedure for applying for the Social Integration Allowance
<b>Process Costs</b>	
<b>PC1</b>	It is a lot of work to apply for the Social Integration Allowance
<b>PC2</b>	The procedure for applying for the Social Integration Allowance is difficult
<b>PC3</b>	All things considered, it takes a lot of time to claim the Social Integration Allowance
<b>Stigma</b>	
<b>S1</b>	If someone receives the Social Integration Allowance he or she should be ashamed
<b>S2</b>	People I see regularly, would look down on me if I would receive the Social Integration Allowance
<b>S3</b>	If I would receive the Social Integration Allowance, this would give me the feeling that I'm begging
<b>S4</b>	If I would receive the Social Integration Allowance, I would be ashamed

Source: Janssens *et al.* (2021).

To assess the determinants of non-take-up, we conduct a series of regression models. We start with summarizing the descriptive statistics of the variables included in the regression model by eligibility status and claiming behaviour. Next, we show the bivariate frequencies of non-take-up across different individual and household characteristics (some of which have been shown in the previous section of this report). In a next step, we extend the analysis of the determinants of non-take-up to a multivariate framework by running various regression models. We limit ourselves to the group of persons considered eligible for social assistance and who are between 18 and 64 years old.

In the regression analysis, the dependent variable takes the value 1 if an eligible person does not receive the benefit, that is, non-take-up, and 0 otherwise. We apply a probit estimator to the dichotomous dependent variable. We estimate four different models, in which we step-wise add different explanatory variables. We start with a parsimonious model that includes individual and household level socio-demographic characteristics which are often used as proxies to measure the relevance of claiming costs for explaining non-take-up (e.g. nationality, educational level, household type,...). In the subsequent models, we add direct measures of potential drivers of non-take-up, based on questions in the TAKE Survey. In the second model, we add indicators of need and vulnerability and

include the following variables: disposable income (as a continuous variable), material deprivation (dummy variable), financial scarcity (categorical variable with the following categories: high, medium, low, with low being the reference category), trigger events (dummy variable). In Model 3, we add measures of various barriers to take-up, including the three dimensions of the Claiming Costs Scale (information, process and social costs) and several dummy variables on whether one experiences languages barriers, transport difficulties, problems with using a computer and health problems. In the final model, we also control for social and psychological variables, including the availability of support of the network (ordinal variable), the number of people one can talk to about money (ordinal variable), whether there is someone in the network who makes use of the services of the PCSW (dummy variable), individual attitudes towards claiming benefits (categorical variable with the following categories: positive, neutral, negative) and optimism about the future (dummy variable). Next, we calculate the conditional probability of non-take-up for various socio-demographic groups using the regression coefficients observed in the final probit model. This provides more information on the degree to which differences in non-take-up levels between socio-economic groups still hold if the composition of these groups would be similar with respect to all other variables included in the regression model. While not establishing a causal link, the results presented in the analysis that follows do help provide some guidance on the potential reasons for non-take up.

#### *4.1.2.2 Results*

##### **Descriptive statistics**

The table below presents sample means and standard deviations of a range of socio-demographic and household characteristics for the individuals in our sample according to their eligibility and non-take-up status. A number of observations can be made. Eligible people, claiming or not, are more often of a foreign nationality and more often materially deprived than non-eligible people. Compared to non-recipients, individuals who are eligible and do take-up SIA are more often female, have a lower level of education, are more often unemployed, have more children in their household and are more often materially deprived. Among the people who receive social assistance, one out of four also benefits from a system of social rent. On the other hand, people with a higher educational level, who are employed, or have a foreign nationality are more represented in the non-take-up group than in the take-up group. Non-take-up households also own their dwelling more frequently compared to the take-up households.

**Table 17. Descriptive Statistics by eligibility and take-up status, TAKE sample between 18-64 years, 2019**

	Not eligible	Eligible Total	Eligible Take-up	Eligible Non-take-up
<b>Individual characteristics</b>				
Female	0.50 (0.02)	0.51 (0.02)	0.53 (0.02)	0.43 (0.04)
No or primary education	0.17 (0.02)	0.18 (0.02)	0.20 (0.02)	0.09 (0.02)
Secondary education	0.54 (0.03)	0.58 (0.03)	0.56 (0.02)	0.55 (0.05)
Tertiary education	0.29 (0.03)	0.25 (0.03)	0.23 (0.02)	0.36 (0.05)
Employed	0.45 (0.03)	0.29 (0.03)	0.33 (0.02)	0.47 (0.05)
Unemployed	0.17 (0.02)	0.26 (0.02)	0.26 (0.02)	0.10 (0.02)
Other inactive	0.38 (0.02)	0.45 (0.03)	0.41 (0.02)	0.43 (0.05)
Foreign nationality	0.32 (0.03)	0.46 (0.03)	0.38 (0.02)	0.43 (0.05)
Single	0.22 (0.02)	0.30 (0.03)	0.25 (0.02)	0.31 (0.04)
Single with child -7y	0.01 (0.00)	0.07 (0.01)	0.05 (0.01)	0.02 (0.01)
Several adults with children	0.35 (0.03)	0.31 (0.02)	0.34 (0.02)	0.28 (0.04)
Several adults without children	0.40 (0.03)	0.27 (0.03)	0.32 (0.02)	0.37 (0.05)
Age	39.3 (0.65)	37.5 (0.66)	38.69 (.47)	37.11 (0.19)
N of kids below 18 in hh	0.71 (0.06)	0.91 (0.07)	.90 (0.05)	.58 (0.08)
N of persons in hh	3.01 (0.10)	2.98 (0.11)	3.05 (0.08)	2.82 (0.16)
Monthly disposable income	1265.72 (56.29)	1025.99 (54.08)	1153.76 (37.48)	1077.71 (111.18)
<b>Household characteristics</b>				
Home owner	0.15 (0.02)	0.15 (0.02)	0.11 (0.02)	0.27 (0.04)
Social rent	0.26 (0.02)	0.24 (0.02)	0.28 (0.02)	0.17 (0.03)
Materially deprived	0.28 (0.02)	0.42 (0.03)	0.38 (0.02)	0.28 (0.04)
High financial scarcity	0.61 (0.03)	0.64 (0.03)	0.68 (0.02)	0.48 (0.05)

Notes. The table contains the proportion or arithmetic mean (for continuous variables) of the variable indicated at the left of the row, for each of the categories mentioned at the top of each column. For instance, the average age of those not eligible is 39.3 years, while about 53% of those taking up SIA are female.

Source: the authors' own calculations using the TAKE data

Before we discuss the results of the probit regressions, it is useful to look at the bivariate correlation between non-take-up and the socio-economic variables included in the analysis. The table below shows the non-take-up rate (with its 95% confidence interval) among the group of eligible persons at active age by several individual and household characteristics. More specifically, we show the incidence of non-take-up for various characteristics (row percentages), without controlling for any other characteristic. In line with the results of Table 18, we find that incidence of non-take-up is higher for males compared to females, higher for higher educated persons compared to lower educated persons and higher for employed persons compared to unemployed persons. Non-take-up is very low among single parent households with young children and relatively high for households consisting of several adults without children. Homeowner household have very high non-take-up rates, whereas households who rent a social dwelling have relatively low non-take-up rates. Persons that are

materially deprived or experience high levels of financial stress also have (much) lower non-take-up rates than persons that are not materially deprived and have lower levels of financial stress. In the next section we go beyond these bivariate frequencies and analyze the independent effect of these factors on the probability of non-take-up.

**Table 18. Non-take-up rates of SIA by individual and household characteristics, people aged 18 to 64 in the TAKE target population, 2019**

	Non-take-up rate	95% CI
Male	53%	46-59%
Female	39%	33-46%
No or primary education	23%	14-32%
Secondary education	43%	37-50%
Tertiary education	67%	57-78%
Employed	72%	64-80%
Unemployed	18%	11-25%
Other inactive	44%	36-52%
Belgian nationality	48%	41-55%
Foreign nationality	42%	34-51%
Single	47%	37-57%
Single with child – 7 years old	11%	1-20%
Several adults with children	41%	33-49%
Several adults without children	63%	52-73%
Home owner	83%	68-97%
Social housing	32%	24-40%
Not materially deprived	56%	49-63%
Materially deprived	31%	23-39%
High financial scarcity	30%	22-39%
Low financial scarcity	74%	65-83%

Source: the authors' own calculations using the TAKE data.

### Probit estimation results

In the table below, we present the results from several probit regressions for the 1,164 people between 18 and 64 considered eligible for SIA in our sample. Model 1 (column 2) estimates the probability of non-take-up as a function of several individual and household level socio-demographic characteristics. In the following columns we add first indicators of need, consequently potential individual barriers to take-up, and finally social and psychological control variables. In what follows, we focus on the conditional association between the various groups of explanatory variables and non-take-up as estimated by the four models.

Several individual and household level characteristics are significantly associated with a higher or lower probability of non-take-up of the Social Integration Allowance. As such, the activity status of a person entitled to social assistance seems to be an important factor in explaining (non-)take-up of the benefit. In all specifications of the model we find that in comparison with individuals who are

employed, people who are unemployed or inactive have a lower probability of non-take-up (and consequently a higher probability to take-up social assistance). Further analysis shows that being unemployed has the largest marginal effect on non-take-up compared to all other socio-demographic variables. Being unemployed is associated with a 30 percentage point decrease in the probability of non-take-up. Not being active in the labour market (i.e. because of sickness, disability or retirement) is associated with a 16 percentage point decrease in the probability of not taking up SIA, in comparison with being employed. Furthermore, the composition of the household seems to be associated with the probability of (non-) take-up as well. In particular, the number of children in the household has a negative conditional correlation with the probability of non-take-up, indicating that the more children there are, the higher the probability that the household will take up SIA. Every additional child is associated with a 8 percentage points decrease in the probability of non-take-up. At the same time, the number of household members in the household increases the probability of non-take-up (marginal effect of 4 percentage points). Next, we find a highly significant positive conditional association between homeownership and non-take-up. Being part of a household that owns the dwelling in which it lives, is associated with a 29 percentage points increase in the probability of non-take-up. The region in which the household lives becomes only significant in the fully specified model, with a lower probability of non-take-up in Brussels and Wallonia compared to households living in Flanders (marginal effects of 13 and 14 percentage points).

For a range of other variables, we fail to find a significant relation with the probability of non-take-up in the final regression model, despite the existence of a bivariate relationship. For example, whereas we observed a difference in (non-)take-up between males and females in the cross tabulations, in the regression models we fail to find a statistically significant effect of gender. Also, with respect to educational level the differences in non-take-up are not confirmed in the fully specified model, as the initial significant association with educational level in Model 1 and 2 disappears after controlling for barriers to take-up and social and psychological factors in Model 3 and 4. No significant coefficients can be observed for nationality either.

For the group of explanatory variables related to need and vulnerability, most variables are not significantly or only weakly associated with the probability of non-take-up. In the fully-specified model, we only observe that people who indicate being able to pay a sudden, unexpected cost of 1000 euros have a higher probability of non-take-up, compared to those who indicate not being able to pay this cost (marginal effect of 13 percentage points). In addition, the level of the simulated benefit amount to which someone is entitled, has a significant (although small) positive effect on the probability of non-take-up, a result opposite to our expectations. It should be kept in mind though, that all these variables are conditional upon personal disposable income. Further modelling would be useful better understand the relation between need and non-take-up.

Continuing with the variables that measure potential barriers for taking up benefits, we observe strong significant effects of information and process costs on the probability of non-take-up. People who face a higher level of information and/or process costs, compared to those with a lower level, have a significantly higher probability of not taking up the benefits to which they are entitled. In particular, a higher level of information and process costs is associated with a 14 and 15 percentage point increase, respectively in the probability of non-take-up. We do not observe a similar significant conditional association with the degree of stigma felt or perceived. We also find no evidence that limitations in reaching public administrations play an important role in understanding non-take-up, including limitations with respect to mobility, the use of a computer or self-perceived low health.

As regards other social and psychological factors, we find that the probability of non-take-up is lower for people who can rely more often on support from their network with their application for benefits. Having someone in the social network who can help on a regular basis with the application for benefits is associated with a 13 percentage points decrease in the probability of non-take-up. At the same time, the probability of non-take-up is higher for people who have more contacts within their network with whom they can talk about money (marginal effects ranging between 11 and 23 percentage points depending on the number of people one has in their network). This could possibly be explained by the fact that for these people, it might be easier to ask for financial support within their network when in need. Finally, people who are more optimistic about their future and feel they have control over the course of their life, are somewhat more likely to not take up the benefits to which they are entitled (marginal positive effect of 4 percentage points). Knowing someone in your network who (also) makes use of the services of the PCSW and having positive or negative attitudes towards claiming, does not seem to be significantly associated with non-take-up of the Social Integration Allowance.

**Table 19. Probit estimations of non-take-up of social assistance, 18-64y (n=1277)**

Variables	Model 1	Model 2	Model 3	Model 4
Cons.	<b>2.501** (.804)</b>	<b>3.077** (.803)</b>	1.470 (.871)	.447 (1.015)
Female	-.198 (.130)	-.108 (.130)	<b>-.285* (.135)</b>	-.291 (.144)
Age	-.074 (.037)	<b>-.096* (.036)</b>	-.074 (.039)	<b>-.085* (.041)</b>
Age <sup>2</sup>	.001 (.000)	<b>.001* (.000)</b>	.001 (.000)	.001 (.000)
No or prim. educ (ref: tertiary)	<b>-.711** (.234)</b>	<b>-.616* (.233)</b>	-.189 (.274)	-.061 (.296)
Secondary educ (ref: tertiary)	<b>-.372* (.169)</b>	<b>-.390* (.173)</b>	-.195 (.212)	-.246 (.231)
Unempl. (ref: employed)	<b>-1.441*** (.230)</b>	<b>-1.525*** (.244)</b>	<b>-1.573*** (.271)</b>	<b>-1.435*** (.269)</b>
Oth. inact. (ref: employ.)	<b>-.651*** (.167)</b>	<b>-.788*** (.192)</b>	<b>-.806*** (.202)</b>	<b>-.765** (.216)</b>
Foreign nationality (0/1)	.070 (.159)	.261 (.178)	.054 (.054)	-.049 (.213)
Nbr of child in hh	<b>-.379** (.100)</b>	<b>-.428*** (.105)</b>	<b>-.544*** (.118)</b>	<b>-.527*** (.119)</b>
Nbr of persons in hh	.077 (.082)	.119 (.080)	<b>.212* (.083)</b>	<b>.238* (.093)</b>
Single person household	.028 (.226)	-.266 (.236)	.050 (.252)	.142 (.257)
Single parent with child -7 year	-.426 (.282)	-.675 (.354)	<b>-.217* (.384)</b>	-.111 (.377)
Adults with children	.284 (.244)	.298 (.268)	.428 (.275)	.327 (.292)
Social housing	-.280 (.169)	-.252 (.184)	-.267 (.199)	-.185 (.207)
Home owner	<b>1.250*** (.269)</b>	<b>1.035** (.272)</b>	<b>1.193*** (.237)</b>	<b>1.488*** (.280)</b>
Brussels (ref: Flanders)	-.109 (.164)	-.204 (.173)	-.296 (.207)	<b>-.686** (.227)</b>
Wallonia (ref: Flanders)	-.251 (.163)	-.163 (.174)	<b>-.487* (.196)</b>	<b>-.734** (.201)</b>
Simulated benefit amount		<b>.000* (.000)</b>	<b>.001* (.000)</b>	<b>.000* (.000)</b>
Personal disposable income		<b>-.000* (.000)</b>	-.000 (.000)	-.000 (.000)
Material deprived (0/1)		.171 (.199)	.192 (.220)	.137 (.228)
High Financial scarcity (low)		-.541* (.240)	-.492 (.256)	-.324 (.267)
Medium Financial scarcity (low)		-.799** (.212)	<b>-.601* (.234)</b>	-.368 (.239)
Trigger event (0/1)		-.312 (.163)	-.062 (.180)	-.002 (.178)
Able to pay unexpected costs		<b>.734** (.209)</b>	<b>.643** (.227)</b>	<b>.540* (.251)</b>
High information costs (ref: low)			<b>.877** (.304)</b>	<b>.773* (.329)</b>
Medium information costs			<b>.664** (.183)</b>	<b>.681** (.188)</b>
High process costs(ref: low)			<b>.968** (.274)</b>	<b>.760* (.278)</b>
Medium process costs (low)			<b>.601** (.196)</b>	.420 (.207)
High stigma (ref: low)			-.658 (.521)	-.762 (.540)
Medium stigma (ref: high)			-.084 (.172)	-.018 (.185)



Variables	Model 1	Model 2	Model 3	Model 4
Transport limitations (0/1)			-.252 (.213)	-.103 (.214)
IT limitations (0/1)			-.305 (.187)	-.379 (.210)
Health limitations (0/1)			-.247 (.206)	-.167 (.210)
Negative attitudes towards (pow)				.181 (.201)
Support social network				<b>-.400* (.147)</b>
Someone in network going to PCSW				-.181 (.188)
N. of persons with whom one can talk about money				<b>.322** (.094)</b>
Optimistic about future (0/1)				<b>.176** (.056)</b>
R-squared	<b>.338</b>	.414	.488	.518

Notes: \*p<0.05., \*\*p<0.01, \*\*\*p<0.001.

Source: The authors' own calculations using the TAKE data.

We can use the estimated regression model to calculate predicted non-take-up rates for various population groups, while keeping the composition of these groups 'constant' with respect to all other variables. These predicted probabilities allow us to determine whether controlling for socio-demographic characteristics, indicators of needs, barriers to take-up and social and psychological factors alters the non-take-up rates that are available for various population groups from simple bivariate cross-tabulations. While to some degree this is an artificial exercise, given that many of these variables are correlated, it helps to identify potential explanations for differences in non-take-up rates between socio-economic and socio-demographic groups.

Looking at the predicted non-take-up rates in the table below, we find that some differences in non-take-up rates become less pronounced when we control for differences in the composition of some groups. This applies for example to the difference in non-take-up between males and females, between higher and lower educated people, between people with the Belgian nationality and those with a foreign nationality, between those in a situation of material deprivation and others and between people with high vs. low levels of financial stress. For example, we find that without controls the non-take-up rate of people experiencing a high level of financial stress is 30%, whereas for people with low levels of financial stress, the non-take-up rate is more than twice as high (74%). With controls, the corresponding percentages become 41% and 48%. Likewise, for material deprivation the large difference in non-take-up rate observed in a bivariate analysis, substantially reduces when controlling for all other variables. Also differences between household types would be less pronounced if household members would otherwise have similar characteristics.

On the other hand, for some socio-demographic variables the difference in non-take-up remains, even after controlling for the need profiles, barriers to take-up and social and psychological variables. For example, the non-take-rate for people who are employed is still substantially higher than for persons who are unemployed (59% vs. 28%), even after controlling for all other variables. Also, the large difference in non-take-up between homeowners and renters of a social dwelling observed in a bivariate framework is preserved when controlling for other factors.

**Table 20. Estimated conditional probability of non-take-up of SIA by people aged 18-64 in the TAKE target population, 2019**

Model 1	Estimated probability of NTU	95% Confidence interval
Male	44%	40-48%
Female	40%	35-45%
Age 0-20	54%	42-66%
Age 20-40	44%	40-49%
Age 40-60	38%	32-43%
Age 60-80	39%	28-51%
No or primary education	43%	35-52%
Secondary education	40%	36-44%
Post secondary	48%	40-55%
Employed	59%	51-67%
Unemployed	28%	22-35%
Other inactive	41%	35-46%
Belgian nationality	43%	38-48%
Foreign nationality	42%	36-47%
Single person household	42%	32-51%
Single parent with child -7 year	31%	19-43%
Adults with children	44%	35-53%
Several adults without children	43%	35-50%
Social housing	39%	32-46%
Home owner	68%	57-80%
Not materially deprived	41%	36-46%
Materially deprived	43%	37-49%
Low financial scarcity	48%	40-56%
High financial scarcity	41%	35-48%

Source: The authors' own calculations using the TAKE data.

#### *4.1.2.3 Conclusion and discussion*

As was discussed above, the level of non-take-up varies by socio-demographic characteristics. The analyses in this section show that some household characteristics can be associated with a different probability of non-take-up, even after controlling for confounding factors in a multivariate regression analysis. For instance, our results show that people who are currently employed have a higher probability to not take up social assistance, while people who are unemployed or currently not active in the labour market are more likely to take up their entitlements. At the household level, eligible households with (young) children have a lower probability of non-take-up, and this decreases further with the number of children they have. Furthermore, homeowners stand out for having a higher probability of missing out on the benefits to which they are entitled. Individual factors play also a role. For instance, people within the TAKE target population who are more optimistic about their future and feel they have the control over the course of their lives, are significantly more likely to not take up SIA. In addition, we find that the social network can be a source of support during the application procedure, as various social network factors are associated with a lower probability of non-take-up.

Furthermore, some specific factors seem to be associated with the probability of (non-) take-up. We find convincing evidence for information costs and process costs to be important factors inhibiting

take-up of social assistance. In contrast to other papers in which they make use of proxies to measure the relevance of the costs associated with claiming benefits, we measured claiming costs in a more direct way by making use of a specifically developed claiming costs scale. We find that after controlling for other factors, people that experience a high level of information and/or process costs, have a higher probability of missing out on their entitlements. We do not find similar evidence for social and psychological costs, which seem to play a smaller role in decisions on non-take-up of the Social Integration Allowance. Given that policy-makers and administrations do have a large degree of control over information costs and process costs, this finding should encourage them to further reduce the claiming costs of claiming social benefits in Belgium.

#### 4.1.3. Automatisations: an effective strategy for reducing non-take-up

Automating access to social benefits is generally considered a key strategy for reducing non-take-up by policy makers in Belgium. One can make a distinction between at least four types of automating benefit access (Buysse *et al.*, 2017; Service de lutte contre la pauvreté, 2013a):

1. Administrative simplification (e.g. the introduction of derived rights)
2. Automatic actualisation (such that people do not have to take the initiative to apply again every so many months)
3. Proactive identification and outreaching to people who are potentially eligible
4. Fully automated benefit access (such that no access at all is required on the part of the beneficiary).

All these forms help to reduce claiming costs. Often, various forms of automation are combined or applied in hybrid form. In Belgium, the Increased Reimbursement (IR) is an example which applies all four types of automation at the same time. However, this has not always been the case. Therefore, it offers a fascinating case for studying the impact of automation on non-take-up. Within the TAKE project, we have carried out two separate studies. The first study looks at the impact of fully automated benefit access, and demonstrates that in terms of non-take-up, there is a very important difference between granting derived rights, and fully automated benefit access. This study is based on administrative data for the entire population, and focuses on the gradual inclusion of Public Centres for Social Welfare in the Crossroads Bank for Social Security which was completed in the 2000s.

The second study looks at the impact of proactively identifying and reaching out to potential beneficiaries. For this study, we designed a large-scale randomized field experiment in collaboration with the Christian Mutualities (NACM), to evaluate to what extent simple behavioural incentives like letters and flyers sent to a low-income group increased the take-up of the Increased Reimbursement (IR) for healthcare in Belgium. In addition, we assessed the characteristics of the households that are best reached by the intervention, and looked at the timing of the effect of the intervention. The methodological details of the experiment have been described in Chapter 3. In the following sections, we discuss the most important findings of both studies.

#### 4.1.3.1 *A derived right is not the same as automatic access*<sup>30</sup>

##### **Context**

For people who received the (equivalent) Social Integration Allowance (SIA) for at least three consecutive months (or six non-consecutive months during the past year), IR is a derived right since 1997. This is also the case for people with an income guarantee for the elderly or a disability benefit, regardless of the duration of receipt of their benefit. This means that, apart from the information on who are the beneficiaries of these benefits (and, in the case of social assistance, how long they have been receiving the benefit), no additional information is required by the health insurers to be able to allocate IR status. In practice, it means that an automated data transfer can be organized between the administrations granting the respective benefits and the health insurers allocating IR status. The Crossroads Bank for Social Security (CBSS), with its information network connecting different social security institutions, plays a crucial role in this regard.

Most of the benefits from which an immediate right to IR is derived, such as the income guarantee for elderly or the disability benefit, are allocated by one, centralized administration. In case of the income guarantee for elderly, this is the Federal Pension Service. In case of the disability benefit, this is the Federal Public Service for Social Security. In these cases, the data transfer for automatic IR allocation starts from one single administration. As this transfer is fairly straightforward, automatic take-up of IR for the beneficiaries of these benefits could be implemented in 1997, immediately after the IR became a derived right for beneficiaries of the income guarantee for elderly or a disability benefit.

In case of SIA, however, allocation is decentralized. 589 local Public Centers for Social Welfare (PCSWs) are responsible for the allocation of social assistance grants to citizens in their geographical working area. Before connection of these PCSWs to the CBSS, SIA beneficiaries received a form from their PCSW proving their right to social assistance. They had to take this form to their health insurer, after which the right to IR was assigned. Once a PCSW was connected to the CBSS, the information on the right to SIA was automatically sent to the health insurers. However, the connection of the 589 PCSWs to the CBSS was a slow and difficult process. As a result, automatic take-up of IR for SIA beneficiaries was only gradually introduced, with some PCSWs already starting in 1999, while others only connected to the CBSS in 2010.

The fact that the connection of PCSWs to the CBSS was spread over time, and introduced later than the connection of other administrations to the CBSS, allows us to study the effect of this automatic take-up on IR non-take-up.

##### **Data and methods**

The study and control populations were extracted from the Datawarehouse Labour Market and Social Protection from the CBSS. We make use of population data. Our primary study population consists of all persons who received a social assistance grant on December 31<sup>st</sup> of the years 2003 to 2011. The control population consists of all persons receiving an income guarantee for the elderly or a disability benefit on December 31<sup>st</sup> of the years 2003 to 2011.

To compare IR non-take-up by SIA beneficiaries with IR non-take-up by beneficiaries of an income guarantee for the elderly or a disability benefit, we use the total study and control populations. To analyze IR non-take-up by social assistance beneficiaries before and after connection of the PCSW to

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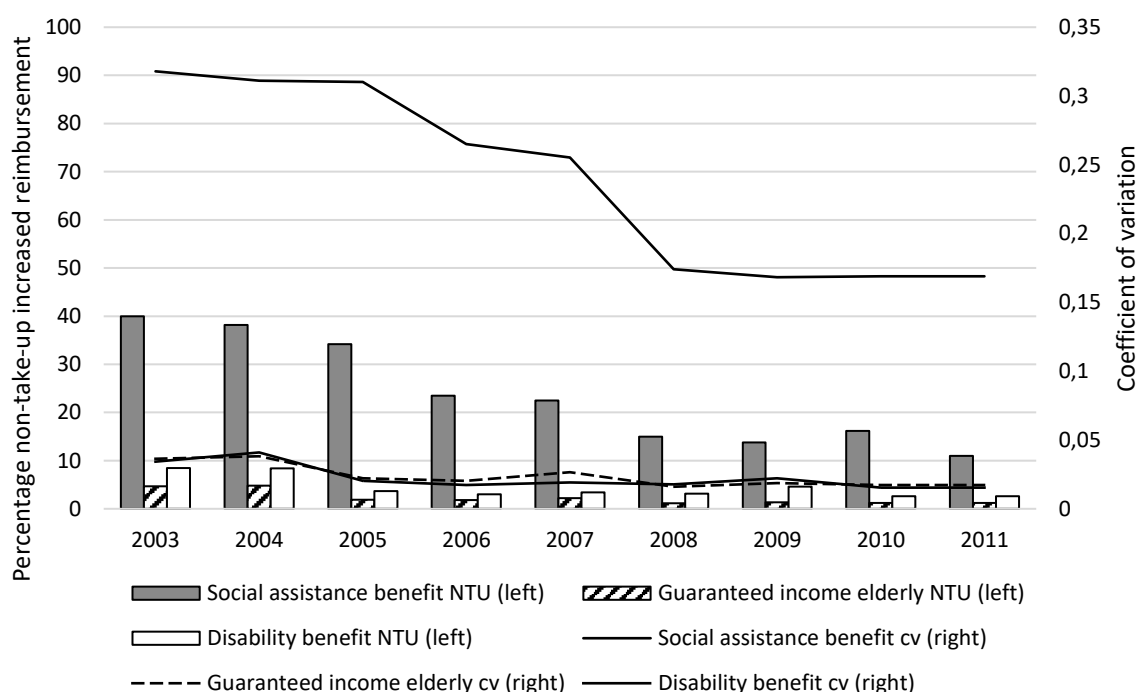
<sup>30</sup> This section is based on Lefevere *et al.* (2019).

the CBSS, we only work with a selection of the study population. First, as 91.2 % of the Public Centers for Social Welfare (PCSW) connected to the Crossroads Bank between 2005 and 2008, we restricted the analysis to social assistance beneficiaries within these PCSWs. Further, for this part of the analysis, we also only selected those PCSWs with at least 10 social assistance beneficiaries in each year of the analysis.

## Results

In the graph below we plot non-take-up rate of IR between 2003 and 2011 for all three populations for whom IR is a derived right. Given that for SIA beneficiaries, we expect factors at the municipal level (and more specifically the moment of connection of a PCSW to the CBSS) to play a role in explaining non-take-up, for each category of beneficiaries we also show the yearly coefficient of variation of the IR non-take-up percentage between municipalities.

**Figure 28: IR non-take-up and coefficient of variation in the study and the control population, 2003-2011**



Note: the percentage non-take-up of year x is calculated by dividing the number of potential beneficiaries on 31<sup>st</sup> December of year x by the number of effective beneficiaries on 1<sup>st</sup> January of year x+1. It can therefore be interpreted as the non-take-up percentage on December 31<sup>st</sup> of year x. The coefficient of variation is based on an unweighted average across municipalities.

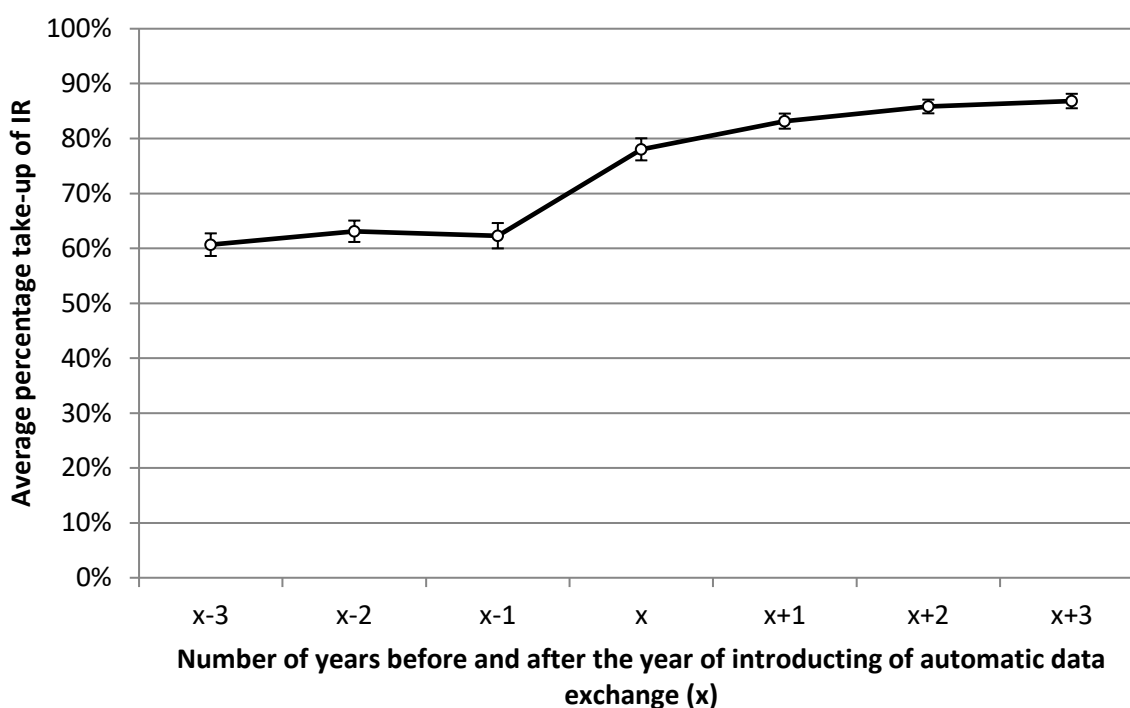
Source: Population data from RIZIV and CBSS, own calculations, explained in detail in Lefevere et al (2021).

There is a drastic decrease in non-take-up of IR among SIA beneficiaries over time: it falls from about 40 % in 2003 to about 10 % in 2011. Furthermore, also the variation between municipalities decreases over time, even though it remains quite substantial compared to the between-municipality variation in non-take-up of IR by the two other categories of beneficiaries. The decrease in non-take-up among IR beneficiaries and in the between-municipality variation mainly takes place between 2005 and 2008, followed by a period of stagnation. By contrast, the non-take-up rate of IR among the two other

categories of beneficiaries is already below 10 % by 2003 and continues to drop over time. In addition, the variation between municipalities non-take-up rates is very low.

In Lefevere et al. (2021), we analyse the data in several ways to assess the role played by the introduction of automatic benefit access for the reduction in non-take-up of IR among SIA beneficiaries. In our view, the data convincingly show that this is the most important factor at play, and probably the only factor of importance. This is illustrated in the graph below in which we show the average take-up rate across municipalities from three years before until two years after connecting the PCWS to the CBSS, effectively automating benefit access. For this analysis we select the 337 PCSWs that connected to the CBSS between 2005 and 2008 and which had a minimum of 10 SIA beneficiaries in all years of the analysis. 35.4 % of these PCSWs connected to the CBSS in 2005, 38.6 % in 2006, 15.9 % in 2007 and 10.0 % in 2008. As the graph below shows, take-up of IR among eligible SIA beneficiaries increases from about 60% the year before the introduction of the automatic data exchange to over 80% the year after its introduction. Thereafter, it keeps on increasing slightly, reaching on average close to 90% take-up three years after its introduction.

**Figure 29. Proportion take-up IR among eligible SIA beneficiaries before and after the introduction of automatic data exchange, PCSWs connected to CBSS between 2006 and 2008**



Source: Population data from RIZIV and CBSS, own calculations, explained in detail in Lefevere et al (2021).

#### 4.1.3.2 Automatic identification and contact of potential beneficiaries<sup>31</sup>

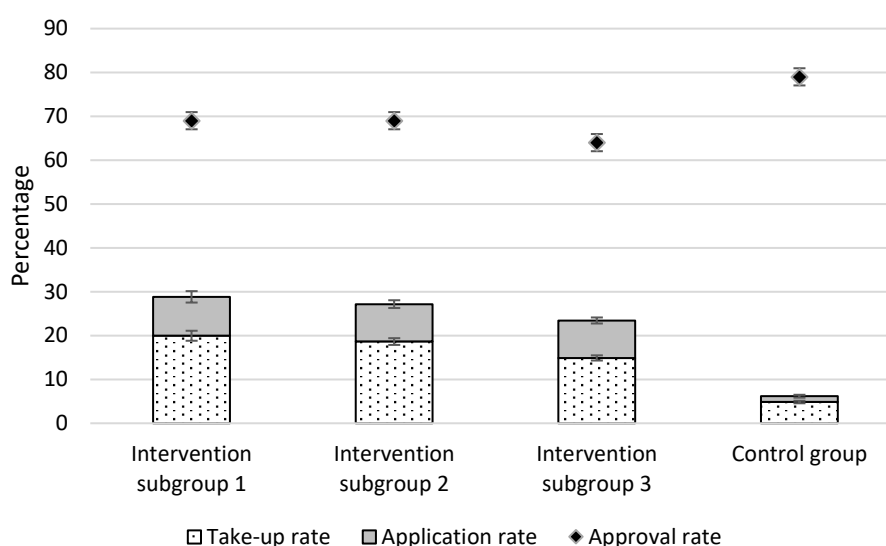
##### Applications and approvals of IR

Results in the figure below show that the effect of sending letters and flyers to potential beneficiaries on the number of applications for the IR is about 17 to 22 percentage points. These numbers are obtained by subtracting the application rates in the control group from those in the intervention

<sup>31</sup> This section contains excerpts of the analysis in Van Gestel et al. (2022).

subgroups. There is also a significantly higher take-up rate of IR, which is about 10 to 15 percentage points higher in the intervention subgroups than in the control group. With overall take-up of IR increasing with a factor of three (Group 3) to four (Group 1), the intervention has a non-negligible effect on the number of low-income households that benefit from IR, and can be considered very effective in increasing the take-up of IR. However, the fact that the post-intervention application rate remains fairly low at approximately 30% in the group that was first contacted, may point to various limitations to the intervention. First of all, it may be that the intervention is not sufficiently targeted (e.g. because of using out-of-date information on taxable income by the tax administration), with NACM reaching out to households who are not eligible. Second, it may also point to the need for another type of intervention to achieve full take-up among the hard-to-reach population, for instance by reducing the ‘application cost’ (e.g. in terms of “hassle” associated with the application for the IR). While also stigma might play a role, we expect this to be less of an issue for any remaining non-take-up because about 18% of the entire Belgian population benefits from IR (approximately 2 million individuals).

**Figure 30. Percentage of households that have applied, and percentage that have received IR in the intervention and control groups, as well as the percentage of approved applications (results at the household level), September 2016**



*Note.* The approval rate is obtained by dividing the take-up by the number of applications. 95% confidence intervals.

The figure above also reports on the ‘approval rate’, i.e. the number of households that receive IR as a proportion of the total number of households that applied for IR. While the approval rate is as high as 80 per cent for households submitting an application in the control group, this drops to 70 per cent for the intervention subgroups. The lower approval rate in the intervention subgroups indicates that the intervention also induced more non-eligible households to apply for IR, imposing unnecessary additional costs both on households and health insurers. The use of more up-to-date tax data to identify potential beneficiaries of IR could probably lower costs for households and Belgian health insurers in terms of mailing and personnel involved in the follow-up of applications. For the same reason, the time between receiving tax information and contacting households should be kept as short as possible. This would most likely improve the efficiency of similar initiatives in the future.

### Never takers, always takers and treated compliers of IR

The profile of those receiving IR as a consequence of the intervention (the ‘treated compliers’), as opposed to those not receiving IR in spite of being contacted by NACM (the ‘never takers’), is important information for evaluating the effectiveness of proactively contacting potential beneficiaries. However, it is impossible to directly observe the characteristics of those who take up IR in reaction to the intervention: households taking up IR in the intervention group are a mixture of households who would take up IR also without being contacted by NACM (the ‘always takers’) and households that take up IR in response to the intervention. Yet, it is possible to indirectly derive the average profile of both groups. This is because the average of any characteristic of those who do take up IR in the intervention group is a weighted average of the characteristics of the treated compliers and the always takers. Due to the random allocation of households to intervention and control groups, one could expect that the characteristics of the always takers in the intervention group (i.e. those who would have taken up IR even without receiving the intervention), are similar to those of the always takers in the control group (i.e. all households taking up IR in the control group). Under this assumption it is possible to compute the average characteristics of the treated compliers and compare them to the never takers and always takers (Kowalski, 2016).

**Table 21. Average characteristics of always Takers, Treated Compliers and Never Takers (take-up of IR), household head and household characteristics, data from intervention subgroup 1 and control group.**

Variable	Always Takers	Treated Compliers	Never Takers	TC-AT		TC-NT	
				Diff.	P-Val.	Diff.	P-Val.
Man	0.51	0.51	0.58	-0.01	0.78	-0.07	0.00
Year of Birth	1956.84	1947.00	1961.58	-9.40	0.00	-14.14	0.00
One parent household	0.01	0.00	0.01	-0.01	0.03	0.00	0.44
Number of Adults	1.33	1.33	1.30	0.00	0.95	0.03	0.19
Number of family members	1.71	1.55	1.70	-0.16	0.02	-0.15	0.01
Maximum Billing	0.33	0.30	0.14	-0.03	0.29	0.16	0.00
Historic expenditure by health insurer (HI)	4833.99	3190.00	2597.22	-1644.12	0.00	592.66	0.06
Historic health care expenditure by household	527.66	407.00	317.43	-120.86	0.00	89.37	0.00
Daily Defined Doses (DDD)	1108.97	1281.00	659.57	172.24	0.02	621.63	0.00
General Hospitalization	8.84	2.33	3.22	-6.51	0.00	-0.89	0.21
Psych. Hospitalization	2.19	1.01	0.41	-1.18	0.21	0.59	0.33
Unemployment (days)	53.27	29.09	28.89	-24.17	0.00	0.21	0.96
Sickness (days)	41.77	10.25	14.24	-31.52	0.00	-3.98	0.22

*Note.* TC-AT = Treated compliers vs. always takers; TC-NT = Treated compliers vs. never takers. Diff. = difference (point estimate). P-Val. = p-value. P-values obtained from a bootstrap using 250 replications. To bootstrap we employ the Stata programming approach suggested by Cameron and Trivedi (2009: 426).

The results of the comparison of group characteristics of intervention subgroup 1 (the subgroup with the longest period of observation after the intervention) with the control group are displayed in the table above. When interpreting the results, it should be kept in mind that effective take-up depends both on filing an application and compliance with eligibility conditions. The differences between the groups under comparison are the combined result of both factors.



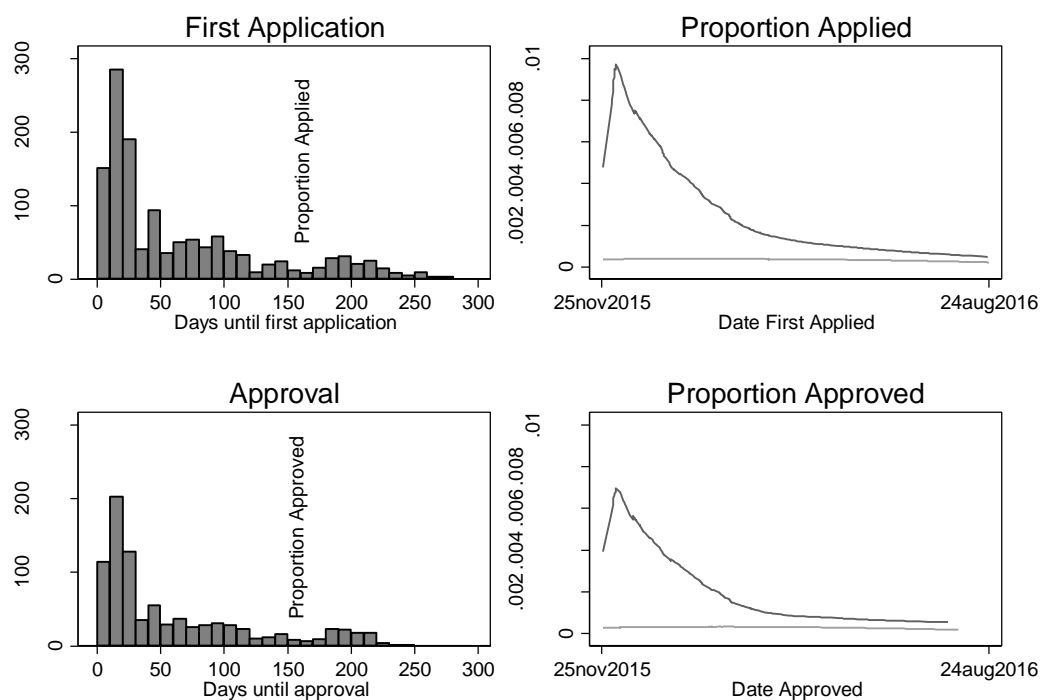
Compared to treated compliers, we find that always takers have considerably higher historic health care expenditures and spend substantively more days in unemployment, sickness and disability. In other words, insofar we can infer from the data at our disposal, the always takers seem to consist, on average, of the most vulnerable group of households. Households with higher historic expenditures might, given this incentive, take up IR more easily, but it might also indicate that always takers are informed by healthcare professionals when taking up care. This pattern is also consistent with adverse selection, saying that those who need it the most select first in subsidised insurance. Given the time spent out of work, their opportunity costs for applying for IR can be considered to be lower as well. Also in other respects the average profile of treated compliers is remarkably different from always takers. On average, treated compliers have somewhat smaller households and are about 9 years older than always takers (which may partially explain the lower number of days on unemployment or sickness benefits). Moreover, while having higher drug use, the treated compliers and their household members have fewer or shorter hospitalizations and they have lower historic healthcare expenditures.

In contrast, never takers (those who do not take up IR even with the intervention), are on average younger, have larger families and have lower healthcare use, and a considerably lower incidence of the Maximum Billing than the treated compliers. The difference in unemployment and sickness is rather small and non-significant. Arguably, the intervention succeeds in incentivizing the individuals that are most likely to be in need to take up IR, apart from those that already take up IR even without additional incentives. Given the lower historic health expenditures, for many of the never takers the perceived financial gain from taking up IR might be too small to go through the hassle of filing an application. Low take-up rates may therefore also result from an informed comparison of benefits and costs, and not all households can be considered as uninformed.

### **Timing of events**

Previous results pointed to interesting time patterns. The figure below graphically displays the timing of the response of households to the intervention in the first intervention subgroup as compared to the control group. The graphs on the left show that the majority of applications and approvals in the first group took place in the first thirty days after the intervention.

**Figure 31. Timing of Events: frequency and proportion of households that have applied for or have been awarded IR across time (intervention subgroup 1 vs. control group)**



*Note.* Left panel: intervention subgroup 1; right-hand side panel: intervention subgroup 1 (black lines) vs. the control group (grey lines) (lowest curves which non-parametrically fit the data).

After thirty days, the responsiveness steadily declines. Nevertheless, the tails of the distribution suggest that some households react even more than 100 days after having received the letter. Potentially, some households may be more likely to apply for IR only when they have healthcare expenditures after they received the intervention. Of all applications, the median amount of days between the intervention and the application is 36. However, the median amount of days until effective take-up is 29 days. This implies that those applying sooner are also more likely to obtain IR.

The graphs at the right hand side in the figure above present smoothed fits comparing the proportion of people applying for or taking up IR in intervention subgroup 1 (the strongly skewed, dark grey lines) with the average take-up percentage in the control group (the flat, light grey lines). As expected, since people in the control group did not receive any intervention at the time we measured take-up, take-up in this group is constant at a relatively low level. This confirms that there are no spill-over effects from the intervention to the control group, and nothing happened that made a real difference on take-up in the control group (such as increased media attention for IR). Although the difference in applications and take-up rates converges between the intervention group and control group over time, over the entire time span take-up is higher in the intervention group. Remarkably, the intervention effect remains observable until nearly one year after intervention.

The profiles of always takers, treated compliers and never takers have shown that those who are most in need – the elderly and those with high historic healthcare expenditures – are more likely to respond to the intervention. The table below shows for intervention subgroup 1 that among the households that obtain IR, those with higher healthcare expenses are also quicker to respond to the mailing and

start an application. In the table below, early and late responders are identified by a median-split on the time that it takes until the first application (conditional on receiving IR). There is no statistically significant difference on absence from work because of unemployment or sickness. The average age of early responders is well above the official retirement age, and 14 years higher than the average age of late responders. This suggests that opportunity costs can affect both uptake of IR and postponement of application for IR.

**Table 22. Average characteristics of early and late responders (for those who obtain IR). Data from intervention subgroup 1.**

Variable	Early Responders	Late Responders	Early-Late	
			Diff.	P-Value
Man	0.53	0.57	-0.04	0.13
Year of Birth	1946.00	1960.00	-14.13	0.00
One parent household	0.00	0.01	0.00	0.24
Number of Adults	1.36	1.30	0.06	0.01
Number of family members	1.54	1.69	-0.16	0.01
Maximum Billing	0.36	0.15	0.20	0.00
Historic expenditure by health insurer (HI)	3413.56	2709.30	704.26	0.02
Historic healthcare expenditure by household	436.97	327.85	109.12	0.00
Daily Defined Doses (DDD)	1429.92	709.11	720.82	0.00
General Hospitalization	3.92	3.21	0.72	0.30
Psych. Hospitalization	0.56	0.58	-0.01	0.98
Unemployment (days)	32.30	28.18	4.12	0.30
Sickness (days)	13.25	14.71	-1.46	0.63

*Note.* Early and late responders are identified by a median split on the time that it takes until the first application.

#### 4.1.3.4. Discussion and Conclusion

While the digitalisation of the welfare state may be associated with digital exclusion (e.g. Schou and Pors, 2019), automated processes that monitor and deprive, rather than help, the poor (e.g. Eubanks, 2018) and an overzealous focus on identifying benefit fraud (e.g. Van Bekkum and Zuiderveen Borgesius, forthcoming), it also opens up major new opportunities for improving access to social rights. This can be done through setting up new data flows between public administrations to identify potential beneficiaries who do not take up their social rights, as well as for generating a process of automatic benefit access. Over the past 20 years, the Belgian government has set up two new data flows to improve the uptake of the Increased Reimbursement of health care, and which we analysed in the previous sections. In the 2000s Public Centres for Social Welfare were gradually connected to the Crossroads Bank for Social Security, generating an automatic data flow between PCSWs and health insurers, de facto introducing automatic benefit access for eligible SIA beneficiaries. In the 2010s, another data flow was set up between health insurers and the tax administration. This allowed health insurers to proactively contact potential beneficiaries who did not take up the IR.

Our analyses strongly suggest that the connection of PCSWs to the CBSS, entailing automatic IR take-up for SIA beneficiaries, had a major impact on IR non-take-up. This is in line with other research that demonstrates the importance of automatic rights assignment in the fight against non-take-up (Currie, 2006). The effect of the introduction of an automated information flow was quick and large: the average IR non-take-up percentage dropped by 21 percentage points between the year preceding the connection to the CBSS and the year after the connection. While this analysis shows the effectiveness

of automatic benefit access, it also underlines the difference between derived rights in principle, and automatic benefit access in practice.

Further research is required to fully understand why non-take-up did not drop to zero after fully automated benefit access. However, the following reasons might have played a role. First, it is possible that delays in the registration of IR allocation might have led to an underestimation of the number of effective IR beneficiaries in our data, and therefore to an overestimation of IR non-take-up. Second, by 2011 the quality of the data transfers was still suboptimal. It was observed that in practice still not all SIA allocations were effectively communicated (in a data transfer) to the health insurers. For that reason, quality controls were introduced, which might have had a further positive impact on IR take-up. Third, exits and re-entries into social assistance are common (Carpentier, 2016), leading to frequent changes, cancellations and updates of the information sent to health insurers. On top of this, a minimum duration condition is still set for SIA beneficiaries to have a right to IR. This often leads to a (non-automated) puzzle for health insurers to establish which beneficiaries effectively have a right to IR. Finally, it may be that not all SIA beneficiaries applied for membership of a health insurer, or paid their membership fee (in practice PCSWs can arrange for this), which are two (probably less important) factors that may also contribute to any remaining non-take-up.

When fully automatic benefit access is not feasible, for instance because administrations do not have access to all relevant information to assess eligibility, proactive identification and outreaching towards potential beneficiaries can be a relatively effective second-best option. The results presented above suggest that the outreaching activities set up by the health insurers (primarily consisting of sending a letter and flyer) were very effective in increasing take-up of IR. Exploiting a large-scale randomized experiment in collaboration with the largest Belgian health insurer NACM, we find a three to fourfold increase in the total take-up of IR as a result of these activities. Remarkably, the number of applications is higher in the intervention group for more than six months after the mailing. At the same time, the intervention evoked a higher percentage of applications by non-eligible members, incurring costs both on households and NACM. Although the intervention triggered a significant response, the efficiency of the mailing could probably be improved by using more up-to-date tax or social security data to identify potential beneficiaries.

We also found that respondents to the mailing are on average older, have lower pre-intervention healthcare expenditures and are more at work compared to always takers. Households that did not react to the mailing, the never takers, are on average younger and have lower healthcare use than households who take up IR. This could arguably indicate that the most vulnerable households who did not yet take up IR, were indeed, on average, reached by the intervention. These findings line up with results reported in other experiments (Guthmuller *et al.*, 2014; Kowalski, 2016). Furthermore, we find that these patterns also translate into the profile of early versus late responders. Households that respond earlier are also those who can be considered to be in higher need or have lower opportunity costs.

Several limitations of the experiment should be kept in mind. First, the population under consideration is sizeable but also specific. The experiment focuses on a low-income population from which members were excluded that had already been contacted in the recent past or that had taken up IR before the start of the experiment. As such, a similar intervention may have had a higher impact when no efforts had previously been made by NACM to improve the take-up of IR. Moreover, because of the distinct membership profile of NACM, some caution is required when generalizing the findings to the Belgian

population. Second, the intervention differed to some extent across regions and households. This requires that our results are interpreted as the overall impact of the intervention. Hence, we are unable to causally identify the effectiveness of different communication and information strategies used in the intervention. Third, we could not directly observe eligibility for those households that did not apply for IR (both among the treated and the non-treated). This implies that the profile of the never takers could look different if the sample would be limited to eligible households only. Further, this implies that we are unable to determine how many eligible households did not apply for IR, even after being contacted. Finally, one could wonder whether the effect of the intervention could be higher if NACM faces adverse incentives for increasing take-up of IR. Although health insurers and/or regional departments may be reluctant to proactively contact members to apply for IR, e.g. because the administrative burden may be higher in this population, (financial) incentives for limiting take-up are largely absent. This suggests that if adverse incentives would play a role, the effect would probably be limited.

Apart from these limitations, this study successfully randomized a real-world intervention involving more than 55,000 households in a developed country. We directly observed application and take-up rates of IR and show that rather non-intrusive interventions can effectively improve the take-up of social benefits in general, and a subsidised health insurance plan in particular. For policy-makers, the experiment shows that proactively contacting low-income households effectively helps to increase the take-up of IR, but it comes at a cost both for households and health insurers. Furthermore, it is unlikely that all those who are eligible did apply for the benefit. The intervention merely reduced information costs, but did not tackle the process costs associated with the take up of IR. More reminders and other types of (more expensive) help may be required (e.g. in the case of language barriers, strong time constraints (e.g. for single parents), or limited mobility), as well as a simplification of the eligibility test. At the same time, it is clear that a universal screening of the population for potential beneficiaries is an important addition to the toolbox of policy-makers for improving the take-up of benefits. Yet, the increased number of applications by ineligible people should elicit policy-makers and health insurers not only to improve the timeliness of the data exchanges, but also to finetune the current procedures to target even better potential beneficiaries. Furthermore, the additional costs of proactive contacting should be balanced against, for instance, a further increase in the level of the IR or improved generosity of the out-of-pocket maximum, especially given that a large share of those most in need are likely to be already included in the programme, as is to some degree also confirmed in the non-take-up figures for 2019 presented above. From a broader perspective, the results suggest that welfare states have great potential for improving benefit access for low-income households through improved data flows and proactive interventions to reach potential beneficiaries.

#### **4.2 Non-take-up of employment subsidies**

Apart from studying non-take-up of social benefits, in the TAKE project we also studied the non-take-up of employment subsidies targeted at employers. Previous non-take-up research has almost invariably focused on social benefits. In the TAKE project, we tried to fill this gap by 1) making a detailed description of the institutional context of NTU of wage subsidies to employers; 2) investigating non-take-up of wage subsidies by employers using existing administrative data from the National Social Security Office (NSSO); and 3) collecting information that could help to improve the take up of wage subsidies. More detailed information on this subchapter can be found in Boucq and López Novella (2018a).

#### 4.2.1. Institutional context, data and methods

For the purpose of making a detailed description of the institutional context of NTU of wage subsidies to employers, we started with an extended inventory of the different measures of reduction of employers' social security contributions and their respective eligibility requirements during the period 2004-2013. We investigated the different measures, their eligibility conditions (for employers and for employees), the administrative procedures required, the amount of benefits and their duration. We also met frontline actors and conducted semi-structured interviews to learn about the existence of monitoring procedures, information channels and potential obstacles encountered by employers, employees, the unemployed, and other relevant actors. We met with members of the National Social Security Office (NSSO), the employer federation SNI/NSZ (Syndicat Neutre pour Indépendants / Neutraal Syndicaat voor Zelfstandigen), the social secretariats Securex and Partena Professionnal, the Walloon public investment company SOGEPA and the Walloon employment office Le Forem. In addition to the literature review, these interviews with relevant actors allowed us to identify other potential reasons for NTU.

We observed that, over the period 2004-2013, many different measures co-existed, which were heterogeneous (in terms of global budget, labour volume, employer volume, ...) and not stable over time (in terms of eligible population, amounts, duration, ...). Furthermore, in addition to the reasons for NTU highlighted in the literature review (complexity, ignorance...), some actors mentioned stigma (entrepreneurs do not want to be seen as 'aid recipients') and also the fear of a tax control. Three actors (SNI/NSZ, Partena Professional and SOGEPA) offered to conduct a quantitative survey among their clients to deepen our knowledge of employer non-take-up.

The institutional context analysis revealed that there was no monitoring of non-take-up of employers' social security contribution discounts. Therefore, to better understand the reasons for employers' non-take-up, we followed a mixed methods design: we first explored the subject through in-depth interviews with key stakeholders, then we carried out a quantitative survey among employers and finally sought to enhance the survey results through interviews and focus groups (for more details, see Boucq and López Novella (2018b)).

1. In-depth interviews: in addition to the actors mentioned above, we also met with representatives of two other regional employment agencies (VDAB en Actiris). In combination with the literature review, this step allowed us to design a questionnaire to explore the reasons for non-take-up among employers.

2. Quantitative surveys (February - May 2017): online surveys were conducted by Partena, SOGEPA and SNI/NSZ. In all three of these surveys, and given the abundance, complexity and heterogeneity of measures, we limited the scope to four representative measures: the "structural reduction", the "reduction for older workers", the "reduction for hiring job seekers" and the "first recruitments measure". The questionnaires included four sections: characteristics of the employer, knowledge and utilization of reduction measures, reasons for non-take-up and ways of improving take-up of these measures. Survey results show that it is the "first recruitments" measure which is the best known. This is probably due to the fact that this measure has been recently strengthened under the tax shift scheme including extended communication on it by the government. However, there is still a large share of respondents who say they have no knowledge of the measure. Regional differences also appear with employers in Wallonia more aware of measures for hiring job seekers and those in Flanders of measures aimed at older workers. Somewhat surprisingly, the structural reduction, which

is the most widely granted, is the least well known by employers. The reason may be that employers trust their social secretariat or accountant who can easily request the structural reduction without any additional information from the employer.

3. Focus groups (November 2017): In order to deepen survey results, we conducted two focus groups with the collaboration of SNI/NSZ and the support of our partners, the Universities of Liège and Antwerp. The purpose of these meetings was to confirm the most acute problems related to employers' non-take-up, to seek out possible or existing solutions as well as to be aware of the different expectations of employers.

In sum, the surveys, interviews and focus groups also allowed us to identify the main reasons for non-take-up by employers. They confirm the traditional economic approach, according to which non-take-up is explained mainly by excessive costs, expressed primarily in time, and by ignorance of the measures. These costs originate mostly from the complexity of the legislation or from administrative procedures. A significant share of employers also said to believe that the different measures were granted automatically. As for psychological costs, which are often mentioned in the literature on non-take-up of welfare rights, these seem negligible among the respondents. Finally, the results allow us to identify three main types of action that could improve take-up of employers' social security contribution discounts. These are: improved communication, simplification of measures and procedures, and automatic application. However, the latter might also present some disadvantages, especially in terms of costs or data protection.

#### 4.2.2. Investigating non-take-up of wage subsidies by employers

The second task consisted of making a detailed assessment of the non-take-up of wage subsidies by employers using existing administrative data. We deemed this important as in spite of the importance of employers' wage subsidies in Belgium (5.5% of total labour costs in 2013), there is very little information on their respective take-up rates. The first objective was therefore to quantify take up rates by type of wage subsidy and identify types of employers/employees and types of measures which might have low take up rates. To do so, in a first step, we explored NSSO data and calculated for each measure the global amount of grants, the concerned labour volume and the share of relative labour costs during the period 2004-2012. Secondly, in order to better understand NTU by employers, we chose 4 measures to be studied in detail: the structural reduction, the reduction for "older workers", the "Activa" measure for the hiring of job seekers, and the reduction "first recruitments". This choice was guided by several factors, including the great diversity between these measures in terms of relative labour costs, extent of eligible population, importance at the macro level, and administrative procedures. At the same time, we prepared the questionnaire for the quantitative survey on employers. As mentioned above three actors (SNI/NSZ, Partena Professional and SOGEP) offered to conduct a quantitative survey among their clients to deepen our knowledge on the NTU of wage subsidies. These three surveys, conducted between February and May 2017 provided a detailed source of information on non-take-up.

The analysis of the four chosen measures started with a detailed analysis of non-take-up of the "first recruitment" measure based on NSSO data. This measure aims at supporting job creation in new and small firms through a reduction in employers' social security contributions. Given its target population, this measure offers a twofold interest for studying non-take-up: first, failure to claim benefits due to unawareness of entitlement might be particularly important among new employers due to a lack of

knowledge of the legislation; second, new employers are particularly vulnerable, and the use of government assistance may increase their chances of survival.

This federal measure was introduced almost 30 years ago but has undergone many changes in terms of duration, amount and number of employees concerned. Therefore, we limited the scope of our study to the first hiring over different periods. For recruitments prior to the first of January 2016, employers were entitled to a substantial discount on contributions during 13 quarters, to be claimed within 20 quarters after the quarter of recruitment. Since 2016 and within the framework of the tax shift employers are exempted for an unlimited period when hiring their first employee.

We built different indicators to quantify non-take-up: a distinction was made between immediate and permanent non-take-up, between partial and total non-take-up and on whether other targeted reduction measures are claimed. We found that the use of other measures decreased the rate of non-take-up of the “first recruitments” measure. However, there still remained a large number of eligible employers who did not make use of any targeted reduction measure over the period they were entitled to. For recruitments between 2007 and 2011, 14% of employers did not make use of any reduction measure over the 20 quarters during which they were entitled. Concerning recruitments between the first and the third quarter of 2016, 18% of eligible employers did not make use of the reduction “first recruitments” or of any other targeted reduction measure during the quarter of recruitment or the following one.

For recruitments between 2007 and 2011, we modelled non-take-up by taking into account the quarter of entitlement to the reduction “first recruitments” and different characteristics of the employer and of the newly hired employee. Results show that non-take-up increased when the first hired employee is paid close to the minimum wage, when he/she works part-time and in industries where the workforce is less qualified, in particular in the accommodation and catering sector. Non-take-up differed according to the region of the employer, and there are differences between provinces within regions. Modelling non-take-up allowed us to identify and rank the explanatory factors available in administrative data. However, the predictive power of these models remained low. Therefore, these factors alone did not allow to predict accurately non-take-up behaviour.

To compute non-take-up rates for the three other measures put forward in the project (structural reduction, older workers and Activa), we relied on further collaboration with NSSO and on data from the Crossroads Bank for Social Security (CBSS). Non-take-up rates for the structural reduction were partially computed by NSSO and appear to be extremely low. Despite its relatively limited financial benefit, this measure targets a very large public and is quite easy to claim, employers have only to select a field in their quarterly social security declaration. However, we saw in the surveys and interviews that this measure was the least well known by employers. Therefore, its high take-up rate might be attributed to social secretariats and accountants who clearly know the measure and claim it for their clients.

The Activa measure aims at promoting the hiring of low skilled or long term unemployed by granting a substantial reduction of labour costs to the employer. This reduction includes a discount in social security contributions and in some cases an additional advantage corresponding to the amount of unemployment benefits. To be able to study non-take-up for this measure, data matching unemployment history and employment transitions was needed. Therefore, we requested semi-aggregate population data from the CBSS. However, the data provided, did not allow us to estimate non-take-up rates reliably. In fact, the criteria used to grant the subsidies are difficult to replicate even



with administrative data combining information on unemployment and employment. The main obstacle is the unemployment duration eligibility requirement which is defined as a minimum number of days within a given period for each category of unemployed. The CBSS data received only allows to compute unemployment duration in months instead of days. Therefore, short-term unemployment interruptions, for instance, could not be taken into consideration which might lead to an overestimation of non-take-up. Keeping in mind this limitation, the data allowed us to examine non-take-up according to certain characteristics of the unemployed and employer and to examine its evolution during the period 2007-2012. While this constituted the first analysis of non-take-up of the Activa measure in Belgium, all results need to be interpreted with care.

Finally, and like the structural reduction, non-take-up rates of the ‘older workers’ reduction were also computed with help from NSSO. However, while these rates were very low, they were not quite reliable because of inconsistencies in the available data. Nevertheless, and similarly to the structural reduction, low non-take-up rates can also be accounted for by the role of social secretariats who have all the information they need to claim the benefits of this measure for their clients.

#### 4.2.3. The first recruitments measure: an evaluation

The last task concerning wage subsidies to employers, consisted in an impact evaluation of the first recruitments measure. To do so, new employers who are entitled to the measure but do not take it up are used as a control group to evaluate the impact of the measure on the probability of survival of young businesses (the full study can be found in López Novella, 2021). In order to isolate the effect of the measure, this comparison requires the groups of recipients and non-recipients to be as similar as possible in terms of characteristics observed in the data (sector, volume of work etc.) and unobserved (motivation, entrepreneurial experience, etc.). Various methods were used to better balance the two groups.

Our results show that the measure has a positive but moderate impact on how long start-ups remain in business. For the 2012 cohort, which we track over a seven-year period, the measure increases the probability of survival, at any given point in the follow-up, achieving a maximum of 5% at the end of the period. This increase is small when compared to the advantages that the measure offers. However, the increase is bigger for “larger” employers, those who start up a business with a volume of work greater than a full-time job.

The analysis of the reinforcement of the measure from 1 January 2016 poses methodological challenges. In this more uncertain context, our results show that the measure still has a positive effect but that the reinforcement had no additional effect on the probability of survival of businesses during their first four years of existence. This result may imply that the new modalities do not address a genuine need during the start-up phase of a young business. However, the lack of impact of the reinforcement might also be explained by the characteristics of the employers themselves. The measure was strongly promoted when it was launched in 2016, which may have led to a larger number of new employers undertaking risky business activities. Our study does not make it possible to differentiate between these two effects.

It is interesting to note that while the measure appears less efficient in 2016, the rate of non-take-up significantly decreased in this period. On the one hand, it was widely advertised by the government but also by employer organizations and social secretariats. On the other hand, it became so generous that start-ups which had no chance of surviving might have been launched. Following the evaluation,

the government revised the measure and reintroduced a capped discount instead of an exception of social security contributions in order to prevent misuse.

#### 4.2.4. Improving the take up of wage subsidies

We identify three main types of actions that could improve the take-up rate of measures reducing labour costs by firms: (1) increased communication about these measures directed specifically at employers but also at social secretariats and accountants who often claim benefits for employers; (2) simplification of measures and procedures since the complexity of the system discourages both determining eligibility and application; and (3) automatic granting of the discounts. However, the latter might also present disadvantages, especially in terms of costs and data protection.

## 5. CONCLUSIONS AND RECOMMENDATIONS

The TAKE project has succeeded in generating new evidence about the size, characteristics, determinants of the non-take-up of social rights and employment subsidies. In addition, the project has generated compelling evidence that various ways of automating the process of applying for social rights is a very effective, but insufficient, strategy for reducing levels of non-take-up. As regards social rights, the main focus of the TAKE project was on several income tested and means tested social benefits: the Social Integration Allowance (SIA), the Income Guarantee for the Elderly (IGE), the Increased Reimbursement of Health Care (IR). In addition, we analysed the take-up and non-take-up of wage subsidies targeted at employers.

### **Non-take-up is too high and undermines the effectiveness of the final safety net**

For all benefits under study, we found substantial levels of non-take-up. Given the specific focus of the TAKE survey on the low-income population, the proportion of non-take-up is not fully comparable and cannot be generalized to the entire population. In contrast, the estimated absolute number of people not receiving certain rights in spite of being eligible, can be considered minimum numbers, which in reality will be much higher if the entire eligible population would have been included. In our target population alone, about 75,000 adults at active age are eligible for SIA without taking it up (in 2019), implying that about 31,000 children lived in poverty in a household whose income could have been higher. Within our target population, this corresponds to a non-take-up rate of about 44%. Similarly, within our target population about 66,000 people aged 65 and over do not receive IGE in spite of being eligible for it, corresponding to a non-take-up rate of about 50%. In addition, about 80,000 adults at active age within our target population, and about 70,000 people aged 65 and over within the target population did not receive the increased reimbursement of health care, in spite of being eligible. Relatively speaking, the non-take-up rate was about 45% and about 24%, respectively. Finally, non-take-up of the heating allowance appeared to be very high within our target population, reaching between 78% and 94% among adults at active age and between 67% and 88% among people aged 65 and over, or again accounting for tens of thousands people missing out on this allowance. This leads to following observations:

1. Even for benefits for which the application process has been largely automated, such as IR and IGE, substantial levels of non-take-up remain.
2. The heating allowance in particular, although open to a relatively small share of the population due to its specific requirements about the fuel used, is characterised by a remarkably high level of non-take-up.
3. These levels of non-take-up definitely undermine the effectiveness of social policies in terms of their poverty-reducing capacity. It should be kept in mind that our study looked only at a part of those eligible for these benefits. In other words, while the proportion of those not taking up their social rights can be different in the entire population, the absolute number of people not taking up benefits can only be higher than the numbers presented here.
4. However, if restricted to our target population, reducing non-take-up to zero per cent would not resolve poverty in Belgium, which was estimated to be at about 15% of the population in 2019 (60% at-risk-of-poverty rate, Eurostat online database as consulted on 27-11-2022). This points to the fact that reducing non-take-up is just one piece of the puzzle for tackling poverty.

## **Some groups are more affected than others**

The analyses also showed that not all groups are equally affected by non-take-up of social benefits. Generally speaking, with the target population of the TAKE survey home owners tend to have higher rates of non-take-up than tenants, while results by gender were more mixed. Among the population at active age, non-take-up increases with level of education, while there are also some indications that, at least among the 65+ population, non-take-up is lower in Brussels and highest in Flanders. Furthermore, it is noteworthy that non-take-up is, within our target group of low-income households, lower among the most vulnerable, such as those in bad health or confronted with material deprivation. At the same time, our results show that the eligibility criteria of SIA and IGE in particular, excluded a substantial share of people confronted with material deprivation, indicating that there is a substantial amount of ‘tertiary non-take-up’. At the same time, the TAKE survey shows that efforts for reducing non-take-up should not blindly be targeted at groups with high levels of non-take-up, but should also take account of their share in the total number of people not taking up their social rights. For instance, in several cases home owners have a high level of non-take-up, but sometimes they account for only a relatively modest share of those not taking up their social rights.

## **The determinants are diverse, but point to important policy levers**

As described in more detail in Janssens and Van Mechelen (2022), the determinants of non-take-up can be located at the individual level, the household level, the policy level and societal level. In our analyses of the determinants of non-take-up of SIA, we found that factors situated at all these levels play a role in explaining non-take-up. First of all, at the individual level, a perception of high information costs or process costs is an important determinant of non-take-up of social assistance at active age. While this is obviously also a factor that is affected by the design of social assistance and its administration, it reflects the fact that many people report not to believe that they are eligible, apart from considering it rather burdensome to apply for support. Furthermore, it is noteworthy that several indicators of need (such as being able to pay unexpected costs or the level of financial scarcity) suggest that those with higher levels of need, are more likely to take up social assistance (when eligible). Remarkably, we also found that while social stigma does exist with regard to taking up social assistance, it does not help to explain why some people take up SIA and others don’t (once we control for other factors). Although we were not able to analyse the effects of the social context in much detail, we did find some effects of someone’s social network on the likelihood of taking up social assistance.

Finally, we found that the design and the implementation of policies play a key role in explaining the level of non-take-up. For instance, non-take-up of the Increased Reimbursement is almost entirely located among those who have to apply for this benefit, and is nearly absent among the groups who are eligible as a passported benefit. This has not always been the case. As is shown by Lefevere *et al.* (2019), before there was an automated data exchange between Public Centres for Social Welfare (OCMWs / CPAS) and the health insurers (the mutualities), non-take-up of the predecessor of the Increased Reimbursement was very substantial among those who received SIA at active age, in spite of IR being a derived right (or passported benefit) for this group. When data exchange was gradually automated, this led to a concomitant increase in take-up of IR among this group, resulting in the low non-take-up rate that we see today. As a corollary, we have to emphasize that while non-take-up of SIA does not always imply non-take-up of IR as well, it is an important contributing factor to non-take-

up of IR in our target population. Although somewhat less outspoken, we observed a similar pattern with regard to the implication of not taking up the Income Guarantee for Elderly people for non-take-up of IR.

### **Automation works, and should be strengthened and expanded**

Given that policy design and implementation do have an impact on non-take-up, policy-makers and administrations can have an impact on the level of non-take-up. The findings of the TAKE project confirm that focusing on automation, with all its variants, is an effective strategy for reducing non-take-up. As highlighted by Steunpunt tot bestrijding van armoede (2013) and Buysse et al. (2017) it is important to keep in mind the various forms of automation conducive to higher take-up rates: (1) automatic identification of and reaching out to potential beneficiaries; (2) automatic enrolment or benefit access; (3) automatic extensions of the beneficiary status; (4) administrative simplification. The field-experiment and analysis of administrative data carried out in the TAKE project have confirmed that the first two types of automation have had a substantial impact on the take-up of the increased reimbursement in the past. Therefore, this is a promising approach which should be continued, strengthened, and expanded where possible. As highlighted above, while the creation of derived rights helps getting access to benefits (lowering information and process costs), it is not sufficient for generating full take-up. Automating benefit access is essential if non-take-up is to be minimised. Obviously, it is key to understand for which groups benefit access is fully automated and for which ones it is not, such that an encompassing strategy can be developed for all those eligible. Also, when reaching out to potential beneficiaries it is important to organise data flows in a timely matter, such that the number of people who turn out to be ineligible is minimised. As we found in the field-experiment, while reaching out to potential beneficiaries had an important impact on the take-up of IR, it also increased the number of people who applied unsuccessfully for IR.

Finally, administrative simplification can help to reduce both process costs and information costs, and can also be an important step towards further automating benefit access. As research of the Federal Public Service Social Security (2022) with the BELMOD model has shown, the budgetary impact of harmonizing administrative concepts across different income support schemes, is not necessarily huge. However, it should be avoided that simplification leads to excluding people in more complex situations, or handling their cases (much) more slowly than those of others. In addition, ‘all or nothing situations’ should be avoided if eligibility criteria for multiple benefits are defined in the same way. Finally, high-quality data protection procedures are essential, and data protection should be implemented in such a way that data are accessible exclusively on a need-to-know basis; that data breaches can easily be contained by storing data in a compartmentalised and decentralised way; that data can only be accessed after multi-factor identification; and citizens have insight into the data collected about them, who has access to them, and can rectify their data not just in theory, but also in practice.

### **Consider a stronger role for Belgian’s not-for-profit health insurers**

More concretely, our findings suggest that Belgium’s health insurers (mutualities) could contribute to reducing the non-take-up of **SIA and IGE**. Given that the Increased Reimbursement reaches a very broad audience, much broader than the target group of the latter two benefits, and given that they carry out an income test for a very large share of the population who does currently not take up SIA

or IGE, they could inform people about potential eligibility of SIA and IGE. Given the large share of people who do not take up SIA because they believe they are not eligible, this could be a game changer with respect to non-take-up of SIA. With relatively limited effort health insurers should be able to assess whether people's income does not only fall below the threshold for IR, but also below the one for SIA and IGE. Obviously, this may include people whose incomes have changed in the meantime, or who do have assets that are not taken into account for IR's income test, but are included in SIA's and IGE's means test. However, it definitely is a strategy that could be finetuned to set up a more targeted approach to inform people about potential eligibility. This could be done in at least two variants. In one setup, the health insurer could simply inform people that they are potentially eligible for SIA or IGE and provide them some details about how to apply for these benefits. In another setup, people could receive a letter in which they are informed about potential eligibility and that, unless they tell their health insurer otherwise, the health insurer will reach out to the relevant Public Centre for Social Welfare or the Federal Pension Service, who could then start a proactive check of potential eligibility and take it from there. In case of IGE, this could come on top of more regular and systematic checks of potential eligibility based on existing databases.

A very similar approach could be applied to the **heating allowance**. However, as regards the in this case, non-take-up levels are so high that a more radical reform seems to be warranted. Given that the social tariff for electricity and gas is allocated automatically to those with an Increased Reimbursement, options should be considered for implementing a similar approach for the Heating Allowance. Given that the involvement of suppliers may be difficult to achieve in an efficient way with respect for people's privacy, other avenues should be explored as well. For instance, the current climate challenge requires that all dwellings move away from burning fossil fuels for heating their dwelling, including the fuels subsidised through the Heating Fund. Therefore, it would make sense for municipalities to keep track of the fuels used in each dwelling. This information could then be matched with the population register. In turn, this could facilitate a data flow which matches heating fuel with benefit status (in particular, regarding the increased reimbursement). The list of eligible and potentially eligible households could then be shared with the Heating Fund or applicable Public Centre for Social Welfare, who could then work on automating the application process as much as possible, not least by proactively reaching out to potential beneficiaries. In the meantime, health insurers could reinforce their efforts to inform beneficiaries of IR about potential eligibility of the heating allowance. An alternative route for building a database of dwellings heated with heating oil and other fuels eligible for a heating allowance, could be to start from the addresses from all past recipients of the heating allowance and the current applicants of the 'heating oil premium', administered by the FPS Economy. The latter benefit was put in place to help households cope with the strong increase in energy prices, and is not subject to a means test. As a result, hundreds of thousands of people have applied for the benefit, over five times as many as there were beneficiaries of the heating allowance in 2019<sup>32</sup>.

### **Reduce the role of the Increased Reimbursement in (local) social policies**

Although somewhat out of scope of this study, it is undeniable that the Increased Reimbursement has played a key role in moderating the impact of the current energy crisis on low-income households. In addition, the Increased Reimbursement is used to create all kinds of passported benefits and

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<sup>32</sup> See <https://www.vrt.be/vrtnws/nl/2022/11/29/stookoliepremie/> (last accessed 30/11/2022).

allowances, many at the local level, including for cultural participation and sporting activities, but also for public transport and energy. This creates two problems: (1) IR's means test is relatively crude. It takes assets into account in a relatively limited manner (which can be fine), and makes use of gross taxable income (rather than net income). In other words, it may not be very good at differentiating between people's wealth when they have a low income, and ignores the level of taxes paid by people with a similar gross taxable income. (2) IR is a binary variable. Having one euro too much excludes people not just from IR, but also from all derived rights that come with it. While to some degree this binary character is difficult to avoid for a large range of social benefits, if the same threshold is used for identifying eligibility across a broad range of benefits, this creates hardly justifiable differences between people on very similar incomes, as well as labour market participation disincentives for people with incomes just below the threshold. Therefore, it is highly recommended that Belgian authorities would develop a new tool (e.g. a 'digital discount passport') which is much more nuanced. Ideally, it would work in several 'steps', indicating various levels of income or need. For instance, it could work in three steps, aimed at those in highest need, those in high need, and those in more moderate need. This tool could then provide hooks for discounts for a broad range of local and other goods and services. If the thresholds used to define the various levels of income or need would be different from those used for social security and social assistance benefits, the effect of just crossing a threshold would be strongly mitigated, as fewer benefits would depend on the same eligibility criteria.

### **Create an ambitious register of wealth and assets**

As has been argued by many others, a high-quality register of wealth and assets is an important missing piece of the puzzle for a more equitable and efficient tax system. In addition, it would go a long way in boosting the possibilities of further automating access to social assistance benefits, and in particular of the Social Integration Allowance and the Income Guarantee for Elderly people. Currently, people's wealth and assets are some of the key pieces of information missing for carrying out means-tests. Having access to this information would (1) facilitate proactively contacting households in an efficient manner, not just with regard to IGE, but also with respect to social assistance for people at active age; (2) it could also speed up means tests within Public Centres for Social Welfare, as it would reduce the burden on households to bring proofs of their financial resources; (3) if the database is sufficiently elaborate and of sufficient quality, it could be considered to go even further in automating benefit access, in particular of IGE. Finally, such a register could be an important asset for developing a 'digital discount passport' that also takes people's wealth and assets into account, which would help to target resources on those most in need.

### **Monitor non-take-up much more consistently**

Belgium needs a much better monitoring of non-take-up of social benefits, including by its administrations (for instance, see, until recently, the Department of Work and Pensions in the UK). This would help assessing the effectiveness of social policies, and evaluating in an evidence-based way the efficiency and effectiveness of efforts aimed at reducing non-take-up.

Setting up the TAKE survey was a very challenging endeavour. Given the available resources, it was key to minimise the number of respondents who were not eligible for any of the benefits studied, and to maximise those who were eligible. The complex institutional landscape and need to integrate both

administrative and survey data were not helpful. While the sample design we implemented succeeded in generating a random sample fit for purpose, it resulted in relatively strong inequalities in probabilities of selection and high standard errors. The fact that we could use a relatively detailed non-response correction model, that included variables of take-up and proxies of non-take-up was a very important asset. Adding to the substantive difficulties of creating and implementing a proper sample design, there were important practical obstacles as well. From the first year of the project, it proved very difficult to agree with the Crossroads Bank for Social Security on a fitting approach. The often slow interactions had a strong impact on the timing of the project, and the requirement to first send response cards to respondents, created confusion among respondents and undoubtedly contributed to a higher level of non-response. In other words, there is room for improvement with respect to facilitating similar data collection exercises in the future.

The TAKE survey is unique in combining a very specific questionnaire on the determinants of non-take-up with very rich data from administrative records. There is still ample room for exploiting these data further. At the same time, in comparison with the situation in 2015 when the TAKE project started, the data landscape in Belgium has changed in several important ways, not least with regard to the current setup of EU-SILC, and the creation of a new large-scale dataset and microsimulation model administered by the FPS Social Security. This should facilitate a more regular monitoring of non-take-up.

First of all, the EU-SILC survey makes now ample use of administrative data, combined with a range of information collected through face-to-face interviews. The efforts done to improve statistical efficiency and calibrating the sample implies that it should be able to estimate non-take-up with higher statistical precision. Furthermore, as it contains a random sample of all private households, it should be able to measure non-take-up for a larger share of the eligible population, than is possible with the TAKE survey. Given that EU-SILC works with the actual composition of the household, rather than the official composition, it is also fit for monitoring non-take-up of benefits that use the same household concept, notably the Social Integration Allowance. On the downside, in comparison with the TAKE survey, EU-SILC: (1) lacks some variables that are relevant for some of the means tests (e.g. savings), which the TAKE simulations have proven to make a substantial difference in estimates of non-take-up; (2) does not contain information on the receipt of some benefits or statuses (e.g. the Increased Reimbursement, and a whole range of cost compensating measures); (3) does not contain direct questions about experiences with application for benefits, attitudes towards benefit receipt, and a whole range of other variables that help to understand and explain non-take-up. However, while it is important to monitor on a yearly basis trends in non-take-up, it is not as essential to review yearly how explanations of non-take-up vary. Just having more information on the trends would already be a very big advantage compared to the current context. Therefore, it seems worthwhile to further explore whether EU-SILC could not be expanded a bit to just add the most essential missing variables for simulating eligibility; and bringing in from administrative sources further information on benefit receipt, notably in relation to the Increased Reimbursement. Furthermore, it could be envisaged to add information from administrative records on the official composition of the household, and include administrative data on people who are a member of the official, but not the actual household.

Second, the FPS Social Security has set up a new dataset for large-scale microsimulation studies on social security and social assistance, with its new microsimulation model BELMOD. BELMOD is sourced with a stratified random sample of 10% of the Belgian Population. In comparison with EU-SILC (and the TAKE survey), it does have a much larger sample, which allows for zooming in on very specific



subpopulations. It also includes a richer set of variables from administrative records. The main drawback is that the BELMOD data include information on official households, and data from administrative records only. In particular for monitoring non-take-up of means-tested benefits such as the Social Integration Allowance, the Income Guarantee for Elderly people and the Heating Allowance, this creates a challenge. Nonetheless, it should be possible to explore the TAKE data further to generate an error correction model such that non-take-up can be monitored with a reasonable margin of error (except for the Heating Allowance). Encouragingly, the Federal Public Service Social Security (2022) aims to explore the possibilities of the combination of an enriched EU-SILC and the BELMOD model, to monitor non-take-up on a more regular basis. We strongly support this approach.

While the approaches mentioned above would be valuable for year-on-year monitoring, we would like to underscore the added value of the complete TAKE dataset. It allows for a more reliable microsimulation of eligibility, and contains essential information for better understanding why levels of non-take-up are what they are. Specific survey information is essential for understanding whether efforts to reduce information costs, process costs and stigma are effective or not. However, if the TAKE survey would be repeated, a stronger sample design can be envisaged. For instance, now it should be possible to either start from the data available to Statbel, or the BELMOD data available to the FPS Social Security as a sampling frame, and to define the target population and sample design in such a way as to select more efficiently a random sample of interest (maximising those eligible for benefits under study), while keeping inequalities in the probability of selection limited, and having a strong non-response correction model. One could even think of setting this up as a panel, rather than 5-yearly cross-sectional survey.

### **The non-take-up of employment subsidies by employers: similar challenges**

Our study shows that the reasons for non-take-up put forward by employers are similar to those put forward by potential beneficiaries of social benefits. These confirm the traditional economic approach, according to which non-take-up is explained mainly by excessive costs, expressed primarily in time, and by ignorance of the measures. These costs originate mostly from the complexity of the legislation or from administrative procedures. In contrast, psychological costs are negligible.

Compared to the level of non-take-up observed for social benefits, the examined employment subsidies display a relatively low level of non-take-up by employers, varying by the type of subsidy. Given that employers do not seem to know the measures or the application procedures well, one of the main factors explaining the lower level of non-take-up by employers, is the role played by social secretariats or accountants who are entitled to claim these benefits for them (this may provide some inspiration for improving citizens' access to social benefits). The measures with the lower non-take-up rates, for example the structural reduction, are the ones for which these service providers have all the information that is required to apply for and obtain these benefits.

Therefore, our recommendations for reducing non-take-up of employment subsidies are similar to those for social benefits: increased information about the available measures, simplification of the application procedures and, in particular, automatic access.

## **Poverty reduction requires more than reducing non-take-up**

As this report shows, strong safety nets require good access if they are to be an effective tool for reducing poverty. The levels of non-take-up documented in this report, undermine the effectiveness and efficiency of Belgium's main financial safety nets. As a result, an encompassing strategy for reducing non-take-up is required. At the same time, we want to stress that an effective strategy for reducing poverty requires much more than reducing non-take-up. Poverty is the result of the way society organises the production and distribution of goods and services, and the degree to which it focuses on fulfilling everyone's basic needs. As a result, before financial safety nets come into action, general economic policy, labour policy and spatial planning define the context in which social assistance measures have to operate, together with policies regarding essential services with respect to housing, health care, education, childcare, mobility, etc., as well as social security. Furthermore, the effectiveness of social assistance as a final safety net depends not just on who takes up social assistance, but also on who is eligible, and the level and kind of support that is received by beneficiaries. In all these respects there is room for strengthening Belgium's anti-poverty strategy.

## 6. DISSEMINATION AND VALORISATION

The topic of non-take-up is not only a topic of academic interest, but also a topic that has received increasing interest from policy makers. The main aim of the TAKE project was therefore to carry out analyses which support public actors in understanding the problem and identifying the most effective ways of reducing non-take-up. Throughout the project, we have shared our findings among academic experts, policy-makers and the wider public. We have attended and presented on numerous academic national and international conferences, workshops, seminars, etc. We have also organised several events for academic experts and policy-makers. Some of the results attracted wider interest from the press.

Organisation of dissemination activities:

- Opening TAKE seminar with academics and high-level policy makers, Federal Planning Bureau, 26-04-2016. More information and presentations: <https://takeproject.wordpress.com/2016-04-26-seminar-on-ntu-committee/>.
- International Expert workshop ‘Non-take-up and coverage of social benefits’, in joint cooperation with the InGRID II project, 13-15 March 2020, FPS Social Security (hybrid conference). More information and presentations: <https://www.inclusivegrowth.eu/expert-workshops/call-28-expert-workshop-ua>.
- TAKE and BELMOD Final Conference, in cooperation with the BELMOD project, 23-06-2022, FPS Social Security. More information, videos and presentations: <https://socialsecurity.belgium.be/en/belmod-project/final-conference-belmod-and-take-project-23-june-2022>

Presentation at conferences, seminars, workshops, and contacts with the press:

- Van Gestel, R., Levere, E., Janssens, J., Lemkens, R., De Spiegeleer, T., Cremer W. & Goedemé, T. ‘Améliorer l’utilisation de l’IM : premiers résultats d’une enquête aléatoire à grande échelle’ Landsbond van Christelijke Mutualiteiten, 2016-12-13.
- Buysse, L. & Janssens, J. ‘A proposal for measuring non-take-up of social benefits among low-income families in Belgium’, InGRID summer school ‘reaching out to hard-to-survey groups among the poor’, HIVA-KU Leuven, 2017-06-02.
- Janssens, J. ‘Who is to blame? An overview of the factors contributing to the non-take-up of social rights’, FISS Conference, Sigtuna, Sweden, 2016-06-19.
- Janssens, J., Buysse, L., Van Mechelen N., & Goedemé, T. ‘TAKE - Reducing Poverty Through Improving the Take Up of Social Policies’, CSB Lunch Seminar, Antwerp, 2016-07-15
- Goedemé T. & Van Gestel, R. ‘Améliorer l’utilisation de l’IM : premiers résultats d’une enquête aléatoire à grande échelle’, Meeting with CM representatives of regional funds, LCM, Brussels, 2016-12-13
- Goedemé, T., ‘Behavioural Reactions to a Reminder to Pay Less for Healthcare. Take-up of Increased Reimbursement in a large-scale randomized field experiment’, INET Research seminar, Oxford, University of Oxford, 2017-03-09.
- Van Gestel, R., Levere, E., Janssens, J., Lemkens, R., De Spiegeleer, T., Cremer W. & Goedemé, T. ‘Améliorer l’utilisation de l’IM : premiers résultats d’une enquête aléatoire à grande échelle’, MISSION Seminar, Antwerp, University of Antwerp, 2017-05-29.

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- Goedemé, T., 'A Reminder to Pay Less for Healthcare: Take-up of Increased Reimbursement in a large-scale randomized field experiment' Studiedag Nudging organised by the State Secretary for combatting poverty Zuhail Demir, Brussels, 2017-11-21.
- Goedemé, T. 'Automatisering van de rechtentoekenning: Stand van zaken en eerste resultaten van de proactieve flux voor de Verhoogde Tegemoetkoming', Seminar FAMIFED, Brussels, 2017-11-23.
- Goedemé, T. 'The impact of processes of automatic enrolment on the take-up of the Increased Reimbursement in Belgium', PhD Master Classes, Antwerp, University of Antwerp, 2018-01-16.
- Janssens, J. 'Measuring stigma associated with the claiming of benefits: lessons from an online experiment', Foundation for International Studies on Social Security (FISS) 2017 Conference: Sigtuna, Sweden, 2018-06-05
- Boucq, E., 'Non-take-up of employers' social security contributions cuts: the case of the 'first recruitments' measure', Belgian Day for Labour Economists (BDLE): Charleroi, Belgium, 2018-06-07
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- Janssens, J. 'Measuring the costs of claiming benefits: construction of a scale with a test in Belgium', ESPAnet Conference: Vilnius, Lithuania, 2018-08-31
- Boucq, E., 'La problématique du non-recours aux réductions de cotisations sociales : l'ampleur du problème, quelles solutions ?', Débat de midi, Institut Belge des Finances Publiques, Brussels, Belgium, 2018-11-07
- Novella-Lopez, M., 'Le non-recours aux réductions de cotisations patronales', Séminaire de la DRE-IWEPS, Namur, Belgium, 2018-11-26.
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- López Novella, M., 'La réduction des cotisations sociales pour les premiers engagements : quel impact ?', Débat de midi, Institut Belge des Finances Publiques, online presentation, 2021-05-28
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#### Planned presentations

- Goedemé, T., participant of the round table entitled 'Prendre la mesure du non-recours dans ses différentes dimensions : complémentarité des approches dans la connaissance du non-recours', Colloque 'Le non-recours aux prestations sociales en France et en Europe', Ministère des Solidarités, de l'Autonomie et des Personnes handicapées, Paris, 2022-12-13.
- Goedemé, T. 'Key results of the TAKE project', meeting with the federal Minister responsible for combating poverty's cabinet, organised by the Combat Poverty Service (Steunpunt tot bestrijding van armoede, bestaansonzekerheid en sociale uitsluiting), Brussels, 2022-12-20.

More information can be found on the TAKE-website: <https://takeproject.wordpress.com/> (available in Dutch, French and English).

## 7. PUBLICATIONS

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