

THE LABOUR MARKET DISADVANTAGE OF CITIZENS WITH A MIGRATION BACKGROUND: FROM MEASURING TO EXPLAINING AND REMEDYING

Excerpt from the honoured Belspo proposal by promoters Stijn Baert, François Rycx, Ive Marx and Mélanie Volral. The researcher to be recruited at Ghent University is 'Researcher 1' of the proposal.

Objectives and state of the art

RESEARCH OBJECTIVES AND STATE OF THE ART

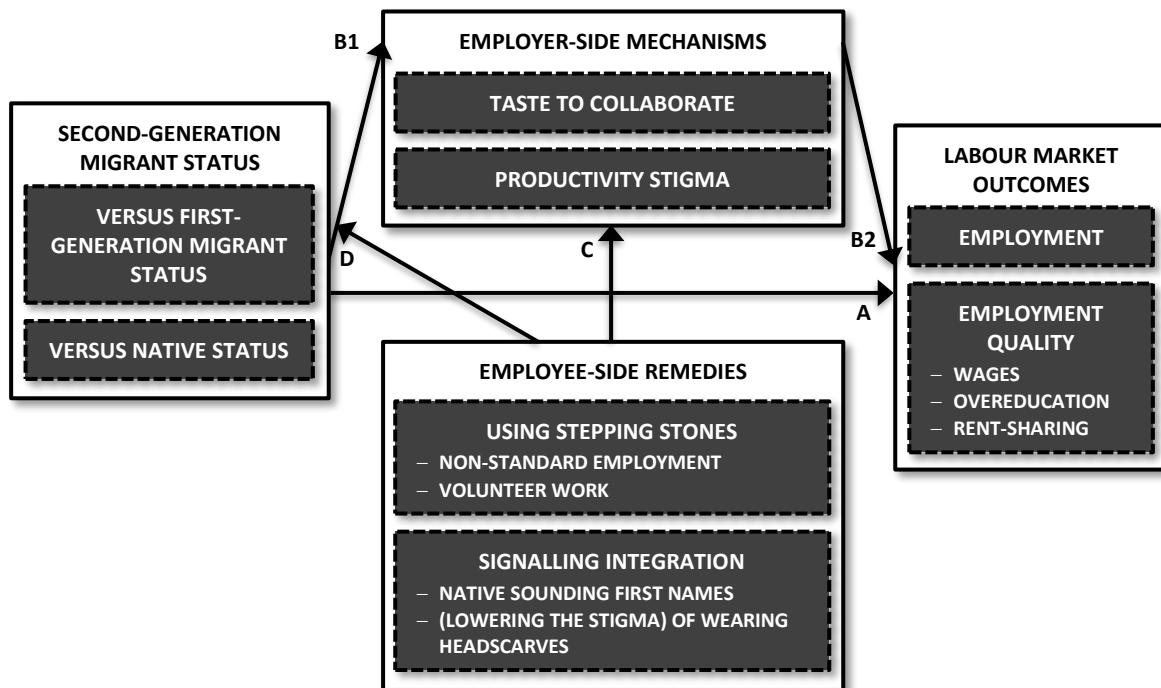
Research has shown abundantly that persons with a migration background typically do less well in the labour market of their host country. Throughout OECD countries, this pattern is established both in terms of employment opportunities (FPS Employment and Unia, 2019; Mayr-Dorn & Preat, 2019; OECD, 2019, 2020; Yao & van Ours, 2015) and in terms of job quality measures such as wage level (Bartolucci, 2014; Carlsson & Rooth, 2016; Chiswick & Miller, 2002; Dustmann et al., 2010; FPS Employment and Unia, 2019) and being employed at one's educational level (Jacobs et al., 2021; Visintin et al., 2015).

This is true with respect to first-generation migrants, but also with respect to later-generation migrants. Overall, a relatively small but fast-growing number of studies investigating the labour market performance of immigrant workers from an intergenerational perspective show that the position of second (and third) generation migrants is better than that of first-generation migrants, but still substantially worse than that of native workers (Alexander et al., 2017; Algan et al., 2010; Brell et al., 2020; Rooth & Ekberg, 2003; Sakamoto et al., 2019; Van Wolleggem et al., 2019; Yao and van Ours, 2015).

In Belgium, the country where we will collect data and where in particular we want to have a societal impact with our research, workers of foreign origin accounted for about 31% of the total workforce in 2016. Among them, 58% originated from developed countries and 42% from transition and developing countries (FPS Employment and Unia, 2019). The Belgian working-age population is thus particularly cosmopolitan and culturally diverse. At the same time, the labour market integration of first-generation immigrants, and especially those born in transition and developing countries, remains very problematic (Baert & Cockx, 2013; Fays et al., 2021; FPS Employment and Unia, 2019; Grinza et al., 2020; Kampelmann & Rycx, 2016; OECD, 2020). This issue also concerns their descendants born in Belgium, i.e. second-generation immigrants (Baert & Cockx, 2013; Piton & Rycx, 2021).

However, determining these disadvantages, as focussed on in most of the previous research, is one thing, tackling them is another. In view of the development of adequate policy measures, it is crucial to get an insight in the mechanisms underlying the established immigrant-native gaps and in the factors that may moderate (in a sense of: reduce) these gaps. With this research proposal, we aim to investigate such mechanisms and remedies. In this respect, we will focus on the outcomes of second (or later) generation migrants with natives and first-generation migrants as comparison groups. Moreover, we distinguish between hard employment outcomes as well as on employment quality outcomes. Figure 1 depicts our research ambitions.

FIGURE 1: PROJECT OVERVIEW.



With regard to the **mechanisms** of the less favourable position of (second-generation) migrants on the labour market (ARROW B1 and ARROW B2 in Figure 1), the effect of a specific migration status on the considered labour market outcomes runs through three clusters of such mechanisms.

First, research indicates that demand-side preferences and behaviour, i.e. discrimination, still hinder the labour market integration of persons with a migration background, both in Belgium and in other countries (Baert, 2018; Carlsson et al., 2019; Carlsson & Rooth, 2007; Duguet et al., 2015; Petit et al., 2016; Neumark, 2018). The underlying reason for this discrimination is less clear. Two theories are dominant: that of tasted-based discrimination (i.e. employers, their employees, or their clients have an aversion to working with persons with a migrant background; Becker, 1957) and that of statistical discrimination (i.e. individuals with a migrant background are disadvantaged by perceived group characteristics of migrants, such as weaker language skills or less social integration; Arrow, 1973).

As the recent literature review by Lippens et al. (2020) indicates, some recent studies have attempted to test specific predictions of these discrimination theories, in order to test their empirical value. For instance, by examining the performance of cashiers in a French grocery store chain, Glover et al. (2017) find that biased employers spend less time with minority employees

such that these employees put forth less effort, which then confirms the negative prior biases of the managers, which is interpreted by the authors as evidence in favour of statistical discrimination. In addition, Edo et al. (2019) show, based on a correspondence experiment, and in line with the theory of taste-based discrimination, that ethnic homophily (by natives) in hiring practices exist in the French labour market. However, notwithstanding their ingenious research designs, these contributions are not able to test both models of discrimination within one framework. In addition, they test key outcomes of these theoretical models but not the attitudes at their base (Baert & De Pauw, 2014; Lippens et al., 2020). This is problematic as these theories ask for different policies to tackle discrimination (i.e. taste-based discrimination calls for increasing the cost of discrimination and increasing competition, while statistical discrimination calls for increasing the information available to employers and anticipating perceived productivity related prejudices). This research proposal focuses on the explicit and jointly testing of the empirical importance of both theories and, in particular, of all the productivity related prejudices described in the scientific literature. We also explicitly focus on how preferences and prejudices are heterogeneous by gender.

The two other mechanisms that may play a role are located on the supply-side of the labour market, i.e. at the side of the (second-generation) migrants themselves. On the one hand, preferences and behaviour on this side of the labour market can also play a role. On the other hand, migrants and non-migrants may differ in terms of human capital (knowledge and skills) due to differences in education and training. The fact that these supply-side mechanisms provide part of the explanation for the disadvantage of migrants in the labour market has already been extensively described in national and international research (Baert & Cockx, 2013; Belzil & Poinas, 2010; Hennessey et al., 2008; Mahuteau & Juanankar, 2008; Nordin & Rooth, 2009; Winters et al., 2001; Yamauchi & Tanabe, 2008; Zaiceva & Zimmermann, 2010; Zenou, 2011). That is why we do not focus on these mechanisms in this proposal. However, throughout the various work packages we do include education as an explanatory variable, so that we can distinguish effects that are conditional on schooling from unconditional effects in this respect.

By experimentally controlling (variables capturing) alternative mechanisms or by using state-of-the-art micro-econometrics to analyse observational data, we aim globally at causal inference. This concerns both causal inference of total effects of a specific migration status on a range of labour market outcomes and causal inference of direct (or 'remaining') effects after controlling for specific mediators (ARROW A in Figure 1).

With regard to the **factors that may moderate these native-migrant gaps** and their underlying mechanisms, a lot of scientific and policy-oriented work has been done on policy-side—and thereby employer-side—interventions to decrease these gaps, in particular by tackling labour market discrimination. More concretely, research has focussed on the adequacy of measures like (i) information and awareness-raising, (ii) legislation and punishment of unequal treatment, (iii) anonymous job applications and (iv) affirmative action (Baert et al., 2021; Behaghel et al., 2015; Hiemstra & Deros, 2015; Holzer & Neumark, 2006). However, strategies at the employee-side beyond strengthening one's human capital of migrants, have received less interest. Two clusters of such strategies seem to be particularly promising. First, one might try to use non-standard forms of employment as a stepping stone. In general, there is mixed evidence on whether part-time work, temporary work, fixed-term work, casual and seasonal work, and self-employed work serve as a

stepping stone to regular employment for people with a migration background or if it is rather the case that such forms of atypical employment entrap migrants into dead-end unstable careers at the fringes of the labour market (Fuller 2011; Kogan, 2011; Jahn & Rosholm, 2013; Lamb et al. 2021; Muñoz-Comet and Steinmetz, 2020). Research for Belgium in that respect, is entirely absent. More in particular, it is unclear whether experience from such non-standard employment lowers discrimination as, in line with the theory of statistical discrimination, it may lower uncertainty concerning particular productivity-related stigma such as work motivation. In this respect, there is recent evidence that volunteering lowers hiring discrimination (Baert & Vujić, 2016), but it is unclear which stigmas are moderated by this volunteer work on one's CV.

A second cluster of buffering strategies at the employee-side relates to citizenship and integration. Here again, recent research shows that immigrants' socio-cultural integration is key to their labour market success, but the underlying mechanisms remain unclear (Corluy et al., 2011; Peters et al., 2018). Two crucial employee characteristics that have been shown to trigger employers' perception of migrant integration are whether or not to give second-generation migrants a native-sounding first name and whether or not to wear a headscarf as a Muslim woman from a migrant background (Chowdhury et al., 2020; Weichselbaumer, 2020). However, it is unclear exactly which stigma are triggered by not having a native name and wearing a headscarf, so it is also unclear what applicants can do to anticipate these perceptions.

Therefore, in what follows, we do not only investigate the importance of such factors that may moderate the native-migrant gaps (ARROW C in Figure 1) but also explore whether their effect is mediated by their moderation of distaste to collaborate with migrants and/or productivity-related prejudices ('moderated mediation'; ARROW D in Figure 1).

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METHODOLOGY

METHODOLOGICAL APPROACH

We use different methods to achieve our research goals. First, we will exploit unique administrative data, recently linked thanks to Belgian federal agencies, containing matched employer-employee data to investigate the aforementioned moderators of the labour market disadvantage of first- and second-generation migrants with respect to all labour market outcomes mentioned in Figure 1. Second, we will use Belgian Labour Force Survey data enriched with longitudinal data from the Crossroads bank of Social Security to investigate the extent to which atypical employment acts as a stepping stone into regular and high-quality employment for people with a migration background relative to natives. Third, we will collect data ourselves, through innovative vignette experiments, with a focus on uncovering mechanisms underlying the aforementioned disadvantage and on testing employee-side interventions to overcome this disadvantage.

TRANSLATION OF THE RESEARCH OBJECTIVES INTO APPROPRIATE AND WELL-DESCRIBED METHODOLOGY

In the first three work packages, we will evaluate a rich matched employer-employee database covering the period 1999-2016 to shed light on the integration of first- and second-generation immigrants in Belgium through the lens of wage differentials (WP1), overeducation (WP2) and rent-sharing (WP3) and the moderators of this integration success. In terms of Figure 1, these packages focus on ARROW A and ARROW C.

More concretely, these three work packages will rely on a rich matched employer-employee database, with observations on 20,375 Belgian firms and 1,609,543 workers, covering the period 1999–2016, which is obtained by merging three different datasets. The first one is the Structure of Earnings Survey (SES), which provides information on firm characteristics (e.g. size, sector, region, type of collective agreement and type of economic and financial control), worker characteristics (e.g. age, gender, education, tenure and type of household) and job characteristics (e.g. detailed information on wages, type of contract, working time, occupation and sector). The second dataset is the Structure of Business Survey (SBS), which contains financial information on firms such as added value and gross operating surplus per hour. The third dataset is stemmed from the Belgian National Register. It provides information on workers' country of birth, first and last names, nationality (both at birth and at the time of the survey) and duration of residence. Moreover, it gives information on the country of birth of workers' parents.

As aforementioned, these three datasets were recently linked thanks to Belgian federal agencies. A formal agreement concerning the use of the linked data between Statistics Belgium and one of the consortium members was signed.

To contribute to the aforementioned intergenerational mobility literature, throughout WP1, WP2

and WP3, workers will be classified in five groups, namely: (i) natives (workers born in Belgium with two parents born in Belgium), (ii) first-generation immigrants from developed countries, (iii) first-generation immigrants from transition and developing countries, (iv) second-generation immigrants from developed countries and (v) second-generation immigrants from transition and developing countries. In addition, in order to account for more fine-grained geographical origins, the following United Nations (2019) classification will also be applied (to both first- and second-generation immigrants): (a) EU-14 countries, (b) other EU countries, (c) other developed countries, (d) other Eastern European countries, (e) Maghreb countries, (f) Sub-Saharan African countries, (g) Near and Middle East countries, (h) emerging and developing Asian countries and (i) Latin America and the Caribbean countries.

The analyses in **WP1**, on wage differentials between natives and first- and second-generation immigrant workers, will be based on the methodology developed by Aubert and Crépon (2003), Bartolucci (2014) and van Ours and Stoeldraijer (2011), in order to estimate wage and productivity equations at the firm level. This methodology will notably be complemented by worker-level earnings' regressions and unconditional RIF-OB quantile decompositions (Blinder, 1973; Firpo et al., 2018; Oaxaca, 1973), which will enable us to examine the magnitude and sources of wage differences according to workers' origin in the upper and lower parts of the wage distribution. As this work package will investigate native-immigrant wage gaps both at the worker and firm-level, accounting for accurate productivity measures, results will notably provide the first Belgian evidence on the intergenerational evolution of immigrants' wages but also provide further evidence on to which extent first-generation versus second-generation immigrants are disadvantaged compared to their native counterparts.

The analyses of **WP2**, on educational mismatch, will implement an empirical or realised matches approach, which measures overeducation based on the level of education required for a job and the observed worker's educational attainment (Kiker et al., 1997; Verdugo & Verdugo, 1989). In order to estimate workers' likelihood of being over-educated according to (i) the country of birth for first-generation immigrants and (ii) the country of birth of the parents for second-generation immigrants, an ordered probit model and a dynamic mixed multinomial logit model will be considered (Boll et al., 2016).

WP3 focusing on rent-sharing will be based on a bargaining model as in, e.g., Margolis and Salvanes (2001) and Martins and Yang (2015). This model takes into account the opportunity cost, the relative bargaining power of workers, and the profits-per-worker in order to calculate the negotiated wage. This approach will allow us to examine whether companies distribute profits equitably with native and (first- and second-generation) immigrant workers in Belgium. To address reverse causality issues and fixed unobserved heterogeneity, a two-stage least squares within estimator (FE-IV) will be adopted. Our main instrument will be a proxy of the price elasticity of the demand for the firm's product (e.g. average share of the firm's sales in total clients' purchases, the firm's number of clients and the firm's number of suppliers), i.e. a variable that is expected to be (i) a strong predictor of rents and (ii) exogenous with respect to wages.

Throughout these three work packages, various moderators of the impact of migrant status on the aforementioned outcomes will be studied. In particular, we will focus on the roles of immigrants' first and last names in this respect. That is, we will examine whether having a foreign-sounding first and/or last name plays a key role with respect to the migrant effect on wages, overeducation and

rent-sharing. More concretely, we will study effect heterogeneity by four different combinations of migrant names: (i) a name comprising a native sounding first name and surname, (ii) a name comprising a native sounding first name and a 'foreign' sounding surname, (iii) a name comprising a 'foreign' sounding first name and a native sounding surname and (iv) a name comprising a 'foreign' sounding first name and surname.

In addition, at least the impact of the following moderating variables will be investigated—by means of adding interaction variables to the models discussed above—(i) level of education, (ii) gender, (iii) duration of residence in Belgium, (iv) naturalisation, (v) tenure, (vi) type of collective agreement by which a worker is covered, (vii) firm size, (viii) union density of the sector, (ix) product market competition in the sector, (x) region (Brussels, Flanders or Wallonia), (xi) language spoken in one's home country, (xii) other scales measuring the distance in several dimensions between the home and guest country and (xiii) business cycle. This list of moderators might be adapted based on the insights from the literature review in WPO (see below).

Finally, by means of running analyses with and without including education level as a control, we will explore the importance of the human capital mechanism in explaining immigrant-native gaps in wages, overeducation and rent-sharing.

In **WP4**, we will conduct an innovative vignette experiment (Auspurg & Hinz, 2014; Van Belle et al., 2018; Van Borm et al., 2021) in which genuine recruiters make (fictitious) hiring decisions on a set of fictitious job candidates with diverging characteristics ('vignette factors') and are surveyed on their perceptions with regards to these fictitious candidates. In particular, one of the vignette factors in which these candidates differ, is their name, which can, in line with our discussion in the context of WP1, WP2 and WP3, be (i) a name comprising a native sounding first name and surname, (ii) a name comprising a native sounding first name and a 'foreign' sounding surname, (iii) a name comprising a 'foreign' sounding first name and a native sounding surname and (iv) a name comprising a 'foreign' sounding first name and surname—the probability of (i) being higher than the probability of the other combinations for reasons of ecological validity. In addition, different ethnic origins will be randomised instead of sticking to one (e.g. the Turkish) country of origin, as was the case in many field experiments measuring unequal treatment (Baert, 2018; Neumark, 2018). In order not to mix discrimination with possible unequal treatment due to administrative thresholds related to nationality, it will be indicated, by analogy with what happened in the aforementioned field experiments, that all candidates have the Belgian nationality—so here, we compare second-generation migrants with natives.

Unequal treatment is then tested by measuring the job interview and hiring probabilities indicated by the participants by the name of the fictitious candidates. In line with Sterkens et al. (2021), we will not ask directly for these probabilities, but innovate by telling participants that another colleague had one prior interview with several applicants. Before sending out invites for a second round in the selection procedure, participants are then asked for their advice on a couple of candidates, herein relying on extracts of the colleagues' interview notes summarised in the organisation's HR software package.

More importantly, related to ARROW B1 and ARROW B2 of Figure 1, participants will have to score several candidate perceptions. In line with Van Borm et al. (2021), three of these perceptions will relate to the theory of taste-based discrimination: 'I believe that as an employer I will enjoy collaborating with this candidate', 'I believe my customers will enjoy collaborating with this

candidate' and 'I believe my co-workers will enjoy collaborating with this candidate'. In addition, based on a structured literature review, candidate perceptions related to the most important productivity-related prejudices will be tested. Based on an exploratory review, the following candidate perceptions might be adopted: intellectual abilities, physical abilities, social abilities, technological knowledge and skills, language skills, leadership skills, assertiveness, ambition, motivation, efficiency, detail-orientation, flexibility, reliability, sense of responsibility, trainability, respect towards authority and openness (Agerström et al., 2012; Burris et al., 2013; Hall, 2001; Koch, 2011; Leong & Hayes, 1990). Thereby, the experimental data will learn which stigma underlie the unequal treatment of various subgroups of migrants by name combinations.

Moreover, to further test macro- and micro-level moderators of the unfavourable outcomes of second-generation migrants (ARROW C of Figure 1) and how they related to the aforementioned candidate perceptions (ARROW D), the classical vignette design will be extended in the following ways. First, the candidate profiles will also vary on education level, to test whether the relative high number of migrants being underemployed in the labour market can be explained by a lower level of unequal treatment (and related stigma) when candidates are overeducated. Second, to further increase the ecological validity compared to previous similar experiments, different scenarios, with different professions to be filled, will be used. This will allow us to test whether unequal treatment and its underlying demand-side mechanisms are heterogeneous by job characteristics.

The participants for this and later vignette studies will be collected by scraping the databases of the public employment services of Flanders, Wallonia and Brussels—the vignette will be submitted both in Dutch and in French. More concretely, all publicly available email addresses of contact persons for the occupations to be filled within the framework of the experiment will be collected. An invitation to the experiment will be sent to these addresses, emphasising that only persons with frequent experience in making recruitment decisions can participate. In addition, the experiment will start with questions about the frequency with which participants are involved in such decisions, resulting in selection variables for our robustness analyses. Previous experiments of ours (e.g., Van Belle et al., 2018; Van Borm et al., 2021) learn that the international scientific community prefers working with genuine recruiters from the public employment agency databases to working with recruiter samples from online survey platforms such as Academic Prolific. These earlier experiments also show that realising a research sample of at least 400 participants per experiment (resulting in more than 1600 candidate assessments if we submit on average four fictitious candidates to these participants), which is seen as a rather large scale within the literature, is certainly realistic. Moreover, by following the D-efficient randomisation procedure of Auspurg and Hinz (2014) this guarantees us enough statistical power to realise our research goals.

WP5 is methodologically very closely related to WP4 but, from a content point of view, very much focused on the gender moderation. This has three implications. First, the D-efficient randomisation procedure will focus strongly on realising sufficient statistical power in the interaction between candidate names and candidate genders. Second, additional candidate perceptions that specifically relate to men and women with a migration background will be added to the experimental design. In this respect, an exploration of the literature learns that for instance males and females with a migration background are, compared with their native counterparts, perceived

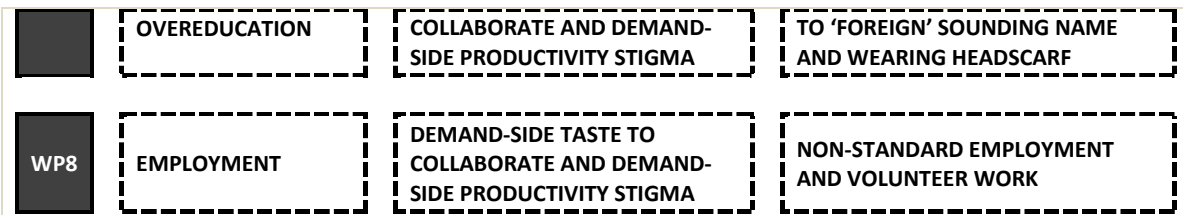
divergently with respect to dominance (Rosette et al., 2018). Third, a photo will be added to the vignettes in order to randomise on women with and without headscarves. As aforementioned, the latter manipulation will allow us to investigate which dimensions of (perceived) distaste and productivity-related stigma are reinforced for migrant women wearing a headscarf.

WP6 focusses on the extent to which atypical employment acts as a stepping stone into regular and high-quality employment for people with a migration background relative to natives and thereby on ARROW C of Figure 1. On the one hand temporary employment could serve as a useful means of overcoming employer devaluation of immigrant home country experience (i.e. serving as a stepping stone to a stable career), while on the other hand it could enhance negative stereotypes and further disadvantage immigrants, serving as a trap into unstable and precarious work (Kogan, 2011, Jahn & Rosholm, 2013). To examine whether atypical employment serves as a stepping stone or trap on the Belgian labour market, this WP draws on rich representative longitudinal data, linking the Belgian Labour Force Survey with administrative data from the Crossroads Bank of Social Security (2015-2021). We use sequence analysis (optimal matching and clustering) for describing and predicting atypical employment trajectories holistically, i.e., we analyse how atypical employment is embedded in long-term career trajectories of people with a migration background (Berglund et al., 2021, Fuller & Stecy-Hildebrandt, 2015, Ojala et al., 2018). Further, we use (competing risks) event history models to assess the outcomes and dynamics of atypical employment. We include precise estimates of transitions in and out of atypical employment, and further test several theoretically relevant outcomes (permanent versus temporary employment, full-time versus part-time employment, unemployment and withdrawal from the labour force). Finally, we assess the interaction between gender and immigration status in employment transitions in the understudied context of Belgium (Fuller, 2011, Reichelt, 2015).

Just like in WP1, WP2 and WP3, we will distinguish between first- and second-generation migrants on the one hand and employment per se as well as wages as outcomes.

FIGURE 2: FOCUS OF THE EMPIRICAL WORK PACKAGES

	MAIN OUTCOME VARIABLE(S)	MAIN MECHANISM(S)	MAIN MODERATOR(S)
WP1	WAGES	SUPPLY-SIDE HUMAN CAPITAL	'FOREIGN SOUNDING' NAME
WP2	OVEREDUCATION		
WP3	RENT-SHARING		
WP4	EMPLOYMENT, OVEREDUCATION	DEMAND-SIDE TASTE TO COLLABORATE AND DEMAND-SIDE PRODUCTIVITY STIGMA	'FOREIGN' SOUNDING NAME
WP5	EMPLOYMENT		GENDER IN COMBINATION WITH WEARING HEADSCARF
WP6	EMPLOYMENT, WAGES	SUPPLY-SIDE HUMAN CAPITAL	NON-STANDARD EMPLOYMENT
WP7	EMPLOYMENT,	DEMAND-SIDE TASTE TO	ANTICIPATION OF STIGMA RELATED



Whereas WP6 already partly makes the transition from explaining the unfavourable labour market outcomes of persons with a migration background to remedying these thresholds, WP7, WP8 and WP9 fully take a solution-oriented approach.

More concretely, in **WP7 and WP8**, all researchers involved in the consortium will pool their insights, acquired from the earlier work packages, in order to develop solution-oriented vignette experiments, which are methodologically related to WP4 and WP5. In other words, the main mechanisms and moderators of the unfavourable outcomes of migrant workers found in WP1, WP2, WP3, WP4, WP5, WP6 and WP7 will be translated into experimental manipulations related to solutions.

In particular, based on WP4, employee-side interventions will be designed to anticipate stigma related to wearing a headscarf in WP7. Suppose, for instance, that lower social abilities and/or leadership skills turns out to be a very prominent stigma towards persons wearing a headscarf, then this solution-focused vignette could randomise over extra-curricular activities compensating for that. Or suppose that overall statistical discrimination is much more prominent as an explanatory mechanism than taste-based discrimination, then we could vary between candidates with and without spontaneously submitted reference letters, in line with the field experiment of Kaas and Manger (2012). The analyses could then not only examine whether these reference letters effectively increase the chances of females with a headscarf, but also what stigma they are working on exactly. In WP8, we focus on testing interventions in terms of including non-standard employment and volunteer work in migrants' CV's following a comparable methodological strategy.

Finally, **WP9** will be an overarching policy article in which no new empirical findings will be realised, but the red thread through the findings from the other work packages—the focus of which is summarised in Figure 2—will be uncovered and a number of concrete policy options will be presented.

In order to ensure that (i) the design of these work packages is completely state-of-the-art and (ii) that these work packages reinforce each other as much as possible, the work in this project will start with a **WP0**, in which, according to the framework of Figure 1, a systematic literature review will be carried out. This will be a work package to which all the consortium members collaborate. This review can also be used as a state of the art for decision-makers and other stake holders, both those who are completely outside the project and those who will commit themselves within our follow-up committee (see below).

Finally, to be consistent with our work planning and time scheduling discussed below, we also mention **WP10** as an umbrella for the coordination, project management and reporting tasks, **WP11** as an umbrella for the data management and **WP12** as an umbrella for the overall valorisation, dissemination and exploitation of the results (except for the valorisation,

dissemination and exploitation of the results of the individual work packages).

These work packages should lead to clear deliverables. As far as WP0 and WP9 are concerned, we will write two English-language policy articles (to be submitted for publication to scientific journals such as *International Labour Review*, *Economic Analysis and Policy*, *Intereconomics*, *De Economist*, *IZA Journal of Labor Policy*, *CESifo Economic Studies* or *BE Journal of Economic Analysis & Policy*). However, these texts will also circulate in their version translated into Dutch and French.

For the empirical work packages we also strive for uniformity in terms of deliverables. For each work package, we will deliver: (i) an English-language scientific article, (ii) a Dutch and French policy-oriented summary (of a few pages), (iii) a Dutch and French press summary (of one page) and (iv) a Dutch and French commentary on one key figure or key graph from the study (for dissemination via social media).

As far as the English-language scientific article is concerned, WP1, WP2 and WP3 will aim for publication at core journals in labour economics and applied micro-econometrics, such as *Journal of Population Economics*, *Labour Economics*, *European Economic Review* and *Empirical Economics*. With WP4, WP5, WP6, WP7 and WP8 we aim at prestigious journals from the fields of labour economics, applied experimental economics and/or industrial relations, such as *Journal of Labor Economics*, *Labour Economics*, *Journal of Economic Behaviour and Organization* and *ILR Review*. The consortium members who have previously published in (most of) these journals consider the chances of obtaining such fine publications to be very realistic.

With regard to the planning of the other deliverables, reference is made to section 5.3.

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Detailed description of the work plan

DETAILED DESCRIPTION OF THE WORK PLAN

We propose to have our studies supported by two researchers for 48 months. On the one hand a tax-free doctoral scholar (without the need of relevant experience), on the other hand a scientist with a Master's degree (and about five years of experience). In what follows, we refer to the tax-free doctoral scholar as **Researcher 1** and to the scientist with a Master's degree as **Researcher 2**.

The tax-free doctoral scholar will mainly be supervised by consortium partners Stijn Baert (promotor) and Ive Marx (copromotor), 30 months at Ghent University and 18 months at University of Antwerp. The scientist with a Master's degree by consortium partners Mélanie Volral (promotor) and François Rycx (copromotor), half time at the Université Libre de Bruxelles and half time at the University of Mons.

However, **in the last of four years they will work together in the same place, in principle 6 months in Ghent (in the context of WP7 and WP8) and 6 months in Brussels (in the context of WP9)**. In other words, in addition to a possible stay abroad, an exchange as visiting researcher across the language border is envisaged.

The project starts with an overall literature review in the context of WPO. Within this work package, four steps are distinguished. In **Task 0.1**, the various consortium partners as well as Researcher 1 and Researcher 2 will write down notes concerning the literature on the arrows and boxes of Figure 1 on which they will focus in the remainder of the project. In **Task 0.2**, integration is achieved through discussion, both with a view to writing a policy article (**Task 0.3**) and with a view to insights to be taken into account for the design of the later work packages. Finally, in **Task 0.4**, this work package is valorised by means of the dissemination of the deliverables mentioned in section 2.2.

The work package leader for WPO is Ive Marx, who is also the task leader for Task 0.1, Task 0.2 and Task 0.3. Stijn Baert is the task leader for Task 0.4. The number of financed person-months for WPO is 6 (Researcher 1 and Researcher 2 each three months of time). The timing of the deliverables is mentioned in the GANTT chart in appendix.

Then, Researcher 2 will focus on **WP1, WP2 and WP3**. Before the analyses of WP1 can be started, extensive time needs to be invested in overall data cleaning (**Task 1.1**). Based on the insights from WP1, the data will be further cleaned at the start of WP2 (**Task 2.1**) and WP3 (**Task 3.1**), but this will obviously require a more limited time investment. Parallel to the data cleaning—which can sometimes involve waiting for external parties (see below)—the literature study for the work packages can be refined (**Task 1.2, Task 2.2 and Task 3.2**). WP1, WP2 and WP 3 then follow the same pattern: data analysis (**Task 1.3, Task 2.3 and Task 3.3**), results interpretation, comparison with the international empirical literature and policy reflections (**Task 1.4, Task 2.4 and Task 3.4**), writing down the scientific articles and the other deliverables mentioned in section 2.2 (**Task 1.5**,

Task 2.5 and Task 3.5) and the dissemination of these deliverables (**Task 1.6, Task 2.6 and Task 3.6**).

The work package and task leader for (all tasks of) WP1 and WP2 is François Rycx, the work package and task leader for (all tasks of) WP3 is Mélanie Volral. The number of financed person-months is 14 for WP1, 8 for WP2 and 8 for WP3. The timing of the deliverables is mentioned in the GANTT chart in appendix.

After WP0, Researcher 1 will focus on WP4 and WP5. These work packages are executed largely in a sequential way so that (methodological and content-related) insights from WP4 can be taken into account when designing the experiment in the context of WP5. Both work packages start with the experimental design (**Task 4.1 and Task 5.1**), which may require further literature review, followed by the data gathering (**Task 4.2 and Task 5.2**). The following steps are in line with the aforementioned packages: data analysis (**Task 4.3 and Task 5.3**), results interpretation, comparison with the international empirical literature and policy reflections (**Task 4.4 and Task 5.4**), writing down the scientific articles and the other deliverables mentioned in section 2.2 (**Task 4.5 and Task 5.5**) and the dissemination of these deliverables (**Task 4.6 and Task 5.6**).

The work package leader for (all tasks of) WP4 and WP5 is Stijn Baert. The number of financed person-months is 12 for WP4 and 9 for WP5. The timing of the deliverables is mentioned in the GANTT chart in appendix.

Next, Researcher 1 will focus on WP6. The study design (**Task 6.1**), writing of a focussed literature review (**Task 6.2**) and the further cleaning of the administrative data (**Task 6.3**) will be conducted as soon as possible within this work package, to anticipate possible delays during these steps. Then follow the data analysis (**Task 6.4**), the results interpretation, comparison with the international empirical literature and policy reflections (**Task 6.5**), the writing down of the second scientific article and the other deliverables mentioned in section 2.2 (**Task 6.6**) and the dissemination of these deliverables (**Task 6.7**).

The work package and task leader for (all tasks of) WP6 is Ive Marx. The number of financed person-months for WP6 is 12. The timing of the deliverables is mentioned in the GANTT chart in appendix.

Then, Researcher 1, Researcher 2 and all consortium partners will collaborate on the design of the final, solution-oriented vignette experiments of WP7 and WP8 (**Task 7.1 and Task 8.1**), followed by the data gathering (**Task 7.2 and Task 8.2**), the data analysis (**Task 7.3 and Task 8.3**), the results interpretation, comparison with the international empirical literature and policy reflections (**Task 7.4 and Task 8.4**), the writing down of the scientific articles and the other deliverables mentioned in section 2.2 (**Task 7.5 and Task 8.5**) and the dissemination of these deliverables (**Task 7.6**).

The work package leader for (all tasks of) WP7 is Stijn Baert. The number of financed person-months for WP7 and WP8 is 14 (Researcher 1 and Researcher 2 each six months of time). The timing of all deliverables is mentioned in the GANTT chart in appendix.

Also with respect to WP9, both Researcher 1 and Researcher 2 as well as all consortium partners are involved. This work package will be carried out in three phases: two afternoons of reflection on the broad outlines of the policy article (**Task 9.1**), the writing and integration of its chapters (**Task 9.2**) and the dissemination of the deliverables mentioned in section 3.2 (**Task 9.3**). In addition, during this work package that focuses on integration, Researcher 1 and Researcher 2 may

prepare their PhD defence (if applicable; **Task 9.4**).

The work package leader for (all tasks of) WP9 is Mélanie Volral. The number of financed person-months for WP9 is 12 (Researcher 1 and Researcher 2 each six months of time). The timing of all deliverables is mentioned in the GANTT chart in appendix.

WP10 (the overall coordination, project management and reporting tasks), WP11 (the data management) and WP12 (the overall identification and follow-up of opportunities concerning valorisation, dissemination and exploitation of the results) will be led by Stijn Baert, supported by Researcher 2. In this way, there will be a continuous exchange of information between the consortium members in Flanders and Wallonia. This is also the reason why the more experienced researcher will be placed in Brussels and Mons (and not at Ghent University). The number of financed person-months is 1 for WP10, 1 for WP11 and 1 for WP12.