

Disadvantages of non-Western immigrants within the Dutch labour market

How much of the employment- and wage differential between natives and immigrants is due to differences in observable characteristics and how much remains unexplained?

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Abstract

In a country with a rich immigrant history as the Netherlands, labour market differences still exist between natives and immigrants. This research examines the size of the differences in employment and wage between natives and (non-Western) immigrants. By using an extension of the original Oaxaca-Blinder decomposition (1973), the study further investigates which characteristics and other reasons like discrimination caused these differentials between the two groups within the Dutch labour market. The results show that the reasons are different for the employment- and wage differential between Dutch natives and (non-Western) immigrants, and that possible discrimination might be more existent in the employment section of the labour market.

Table of contents

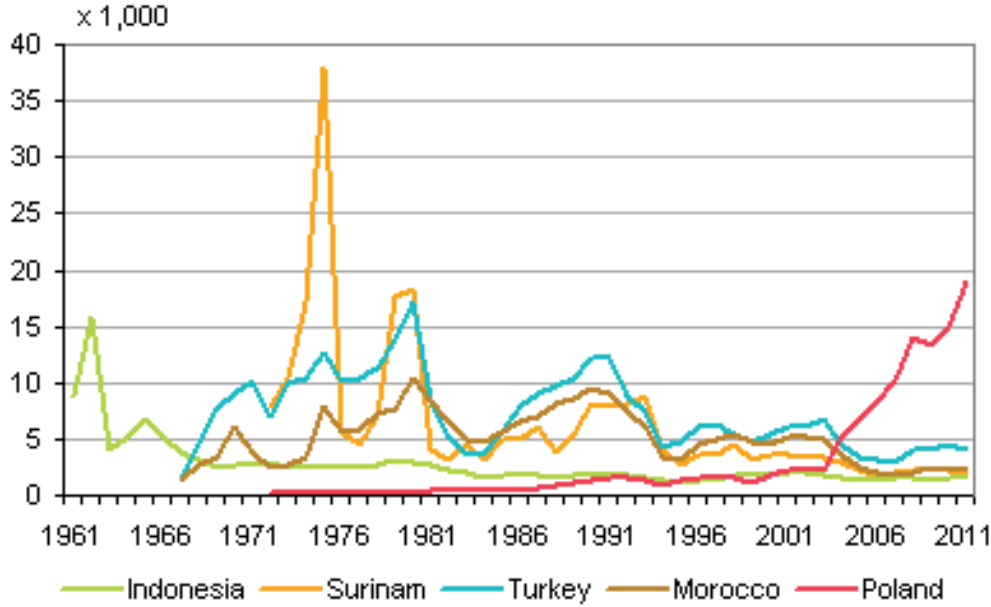
1.	Introduction	3
2.	Theoretical framework	6
2.1	Explained components	6
2.1.1	Human capital	6
2.1.2	Age	6
2.1.3	Gender and occupation	7
2.2	Unexplained components	8
2.2.1	Discrimination	8
2.2.2	Human capital home country	9
2.3	Testing wage differentials	9
3.	Literature review	11
4.	Data	14
5.	Methodology	17
6.	Results	18
6.1	Regressions	19
6.2	Decompositions	21
7.	Conclusion	24
	Bibliography	26
	Appendix 1 – Adjustments dataset	29
	Appendix 2 – Conducted variables dataset	30

1. Introduction

According to an analysis of the statistics of Eurostat and the OESO (Organisation of Economic Cooperation and Development), the Dutch labour market is one of the worse labour markets of Europe for immigrants. Almost half of the immigrants (49.5 percent) has a paid job, in contrast with the 77.1 percent of the native Dutch labour force (De Volkskrant, 2015). This immigrant-native difference of 27.6 percent point is the second highest of Europe, behind Sweden as number one. The economic crisis affected the biggest non-Western immigrants of the Netherlands the most and caused a big increase in their unemployment rate. The unemployment is the highest within the group of Moroccans (19.6 percent), followed by the Antilleans (19.3 percent), Turks (15.3 percent) and Surinamese (13.9 percent), compared to the unemployment rate of the Dutch natives: 2.8 percent (De Volkskrant, 2015). The most important reasons for lower job opportunities for first generation immigrants are language barriers and lower level of education. Remarkable is that high-educated immigrants are more often unemployed than natives with the same level of education. It seems that discrimination might also play a role (De Volkskrant, 2015). Dutch minister of Social Affairs and Employment Asscher considers this discrimination within the Dutch labour market as unacceptable. According to Asscher 'future dreams will end in frustration and wasted talent when labour market discrimination is present' (NU.nl, 2015). Besides, discrimination will reduce the possibility for immigrants to further integrate. Not only differences in unemployment, but also differences in wages between natives and immigrants are investigated. According to the research of the wage structure in 2002 for the CBS (Central Bureau of Statistics), natives earned on average a gross wage of 17.47 euro per hour, compared to the gross wages between 12.33 and 14.56 euro for the four biggest non-Western immigrant groups (Advokaat, 2015). After correcting for different background variables and characteristics, the wage difference is much reduced. However, this wage gap between immigrants and Dutch natives is still present for some of the minority groups, especially for non-Western immigrants (van der Vliet, 2005).

Immigrants are not new in the Netherlands; it is a country with a rich immigration history. From the mid of the last century, immigrants with different backgrounds and motives migrated to the Netherlands. From the 1960s, guest workers from Turkey and Morocco immigrated in search for work, followed years later by their family for reunification. Immigrants from former colonies contributed to the high immigration rate in the 1950s and

1970s when ex-colonies Indonesia, Surinam and the Netherlands Antilles became independent. In the 1990s political immigrants from Afghanistan and former Soviet Union came to the Netherlands, while in recent years the motives of moving shifted back to the 1960s motive of labour migration and mostly East European workers came to the Netherlands (Nationaal Kompas, 2011).



Source: CBS

Figure 1: Immigrants in the Netherlands over time categorized by country of birth (Nicolaas and Wobma, 2012)

The existence of these different immigration waves within the Netherlands might lead to different outcomes within the labour market per immigration wave. Guest workers who arrived in the 1960s have been in the Netherlands for a longer time and might have experienced disadvantages in the labour market in an earlier stage of their years in the Netherlands, compared to East European workers who just migrated to the Netherlands and might encounter labour market disadvantages nowadays.

Compared to the native population, immigrants might differ in several characteristics that determine their wages in the labour market. The difference in wages of immigrants and natives can have several different reasons. Blackaby et al., (2006) showed in their paper that an element of the payment disadvantage for immigrants could be explained by different human capital endowments and socio-economic characteristics. For example, it is shown that on average ethnic minority groups have lower educational qualifications (Battacharyya et al., 2003). Rooth and Ekberg (2003) show the importance of native human-capital and the

differences in occupation choice, while Reimers (1983) points out that the level of educational attainment and language skills cause a significant part of the native-immigrant wage differences (Rooth & Ekberg, 2003; Reimers, 1983). What if these characteristics would be the same? Would there still be a part in the payment difference between natives and immigrants that cannot be explained? It is possible that this unexplained element contains parts of ethnic discrimination, but also cultural differences and disadvantages in country of birth (Elliot & Lindley, 2008).

Therefore, the following research question will be investigated in this paper:

To what extent do non-Western immigrants in the Netherlands experience labour market disadvantages in employment and wages compared to natives and how much of this is due to differences in observable characteristics and how much remains unexplained?

The results indicate that non-Western immigrants experience labour market disadvantages in employment and wages compared to Dutch natives. The wage differential between natives and immigrants is larger than the employment differential. However, the biggest part of the wage differential could be explained by observable characteristics, while the major part of the employment differential remains unexplained.

In the next section the theoretical framework will be presented. The third section reviews the empirical literature of native-immigrants differentials in other countries. The fourth section explains which data has been used to answer the research question. In the fifth section the methodology used in this paper will be explained: an extended methodology of the original decomposition of Oaxaca (1973) and Blinder (1973). After the presentation of the methodology, the results of the wage equations and the decomposition will be exposed. The last section presents a conclusion, including policy implications and suggestions for further research.

2. Theoretical framework

Differences in the labour market between immigrants and natives can be caused and explained by differences in observable characteristics for both of the groups.

2.1 Explained components

For a long time, it was believed that the distribution of income was related with the distribution of individual abilities (Mincer, 1958). According to neo-classical economic literature, a well-functioning labour market rewards employees according their contribution in the company (Schippers and Siegers, 2002). Differences in wages are therefore possible because the productivity per worker can differ. Explanations for wage differences were therefore focussed on causes of differences in productivity (Schippers and Siegers, 2002).

2.1.1 Human capital

Mincer (1974) pointed out that investment in human capital is an important factor in determining the productivity of a worker (Mincer, 1974). Human capital is the possession of productive abilities like knowledge, but also skills as language (Schippers and Siegers, 2002). The two important elements of human capital investment are schooling and post-school investments, like training. When the information about post-school investments is unavailable, experience can be used as an indicator for this type of human capital investment. Experience can be estimated from age and the length of schooling (Mincer, 1974). The human capital theory of Mincer states that due to education the productivity of the workers will increase, which will subsequently lead to an increase in their wage (Mincer, 1974). An alternative argument is that education will not increase the human capital and productivity of a worker, but works as a signal for the natural productivity of the worker when this productivity is not observable for the employer (Borjas, 2000).

2.1.2 Age

Mincer (1958) also showed that this level of human capital is related to age and that age is an important factor in determining the level of wages. Age is an important factor to take into account in determining the immigrant-native wage gap, since the age compositions of the two groups differ. In the Netherlands, the majority part of the native Dutch people is aged between 50 and 55 years. However, Western and non-Western immigrants are mostly aged between 25 and 35 years (Statline CBS, 2016). This gap in age between natives and immigrants might be

an important factor of the wage difference between the two groups. Some important properties can be conducted from age-earnings profiles of different education levels. First, as mentioned above it is empirically shown that highly educated workers earn more than less educated workers (Borjas, 2000). Second, earnings rise over lifetime at a decreasing rate at least until middle age (Borjas, 2000). This can occur when people are investing in on-the-job training that is general and not firm specific, where they can develop themselves in general over time (Taubman & Wales, 1974). Another argument is that when employers are not able to observe the productivity and abilities of the worker, they base the wage on the performance of the workers on the job (Taubman & Wales, 1974). The longer on the job, the better this performance can be. Therefore, the level of the wage is related to the tenure of a worker and thus also an important factor to take into account. Lastly, the age-earnings profiles of workers from different education levels diverge over time (Borjas, 2000). This divergence means that wages increase more rapidly over lifetime for more educated workers than less educated ones (Mincer, 1958). The higher the education level, the steeper is the age income profile (Taubman & Wales, 1974). An explanation for this can be the ability bias, a theory that states that more educated workers have a higher return of a year of education, which could lead to a higher level of human capital and therefore higher wages (Borjas, 2000).

2.1.3 Gender and occupation

Differences in wages are also seen between men and women, which are linked to differences in human capital and occupation. An important contribution of this wage difference is that wages of men and women in mainly female occupations are statistically lower. England (1992) defined two types of social skills as part of human capital: nurturance and authority. She found that demand for nurturing skills are penalized, but that demand for authority was rewarded (England, 1992). Given the fact that women are more concentrated in occupations that require nurturance and men in occupations requiring authority, wages can be different between men and women (Kilbourne et al., 1994). Further, tenure can be lower in mainly female occupations, which can lead to lower training investment, leading to lower wages for both men and women in female occupations (Macpherson & Hirsch, 1995). In general, wages consist of wage differentials compensating for job characteristics (Macpherson & Hirsch, 1995). Job characteristics can differ between female and male occupations, like the level of on-the-job training and proportion of part-time workers, but also working conditions as physical demands, environmental conditions and demanded strength (Macpherson & Hirsch,

1995). Another explanation for the gender wage differential is Becker's 'taste theory', which will be further discussed in the following section.

2.2 Unexplained components

Workers with the same level of productivity, human capital and other observable variables mentioned in the section above can still experience differences in wages. Other factors than these also play a role in determining the wage. These other factors are the subject of many discrimination theories (Schippers & Siegers, 2002).

2.2.1 Discrimination

Discrimination can therefore be defined as the remaining wage differentials that cannot be explained by differences in factors as productivity and human capital. Several theories are developed in order to explain these remaining differentials. The first theory that is explaining wage differentials between groups is the 'taste theory' of Becker in his *Economics of Discrimination* (Becker, 1957). According to Becker: 'Discrimination is the prejudice or aversion against certain groups', based on for example race or gender. Becker's 'taste theory' states that when discrimination occurs, employers see this group as more expensive compared to the rest (Becker, 1957). Offering a lower wage will make employers hire the workers of the discriminated group. The profit they make by offering a lower wage compensates for their aversion against the worker (Schippers and Siegers, 2002). This discrimination only occurs when the labour market is not perfectly competitive. However, it is still possible that employers hire workers from another group, even when this will reduce their profits (Becker, 1957; Arrow, 1973).

Another explanation for discrimination besides the 'taste theory' is the theory of statistical discrimination. Employers have a lack of information about the productivity of potential new workers. For the employer it is difficult to predict the productivity of a worker in the hiring process because this becomes often known only during the job (Schippers and Siegers, 2002). Employers have to form an expectation about the future productivity when gaining information about the worker is expensive. They base their ideas on the experiences of themselves or others in the past (Schippers and Siegers, 2002). When employers have experienced that certain groups are on average less productive or qualified than other groups, employers will use this group characteristic as a proxy for the individual of this group (Phelps, 1972). According to Phelps (1972), hiring decisions based on previous experiences

or information about experiences of others are called statistical discrimination. Both ‘taste’ discrimination as statistical discrimination can cause differences in wages between certain groups.

2.2.2 Human capital home country

Another possible explanation other than discrimination for the remaining unexplained wage differences between groups is the convertibility of the knowledge and experiences of the workers between different countries. Ederveen (2004) states in his Annex to the State of the European Union 2005¹ that the knowledge and experience of a worker gained in another country are not immediately applicable to the new labour market of the destination country (Ederveen, 2004). When immigrants arrive they miss the human capital that is useful for that country, for example language skills. When for example language barriers exist, it takes time for immigrants to find a suitable job and therefore lack working experience compared to natives. Besides, Ederveen (2004) defines the problem of differences in schooling. Often the education in the home country of immigrants is regarded as less qualitative than in the destination country. Possible explanations are the lack of information about the level of education and the lack of connection between the education in the home country and the labour market in the destination country (Ederveen, 2004). The lack of connection between education or skills of immigrants and the labour market in the home country can cause differences in wages between immigrants and natives, since natives do not face this problem of disconnection.

2.3 Testing wage differentials

One of the most common approaches to analyse the differences in labour market outcomes between immigrants and natives and the role of explained and unexplained parts as discrimination, is the Oaxaca-Blinder decomposition (Elder, Goddeeris & Haider, 2010). This decomposition method examines the causes of the differences between groups, distinguished in parts that can be explained by differences in observable characteristics and a component that remains unexplained. By following the original decomposition of Oaxaca (1973) and Blinder (1973) in their papers, the decomposition is based on a linear regression for both of the groups. Given that d is the variable indicating the group, for example 0 indicates immigrants and 1 indicates natives, y^d is the dependent variable for both of the groups, x^d is

¹ This Annex to the State of the European Union was written in collaboration with Netherlands Bureau for Economic Policy Analysis (CPB) and Social and Cultural Planning Office of the Netherlands (SCP)

the vector of the independent observable characteristics in the linear regressions including the constant, β^d is the vector of the coefficients from the linear regressions and \bar{y}^d and \bar{x}^d are the means of the independent and dependent variables respectively, it can be shown that (Elder, Goddeeris & Haider, 2010):

$$(1) \quad \bar{y}_1 - \bar{y}_0 = (\bar{x}_1 - \bar{x}_0)\beta_1 + (\beta_1 - \beta_0)\bar{x}_0$$

In Equation (1) the first term on the right hand side presents the part explained by observable characteristics and the second term the unexplained component. Oaxaca states in his paper of Male-Female Wage Differentials in the Urban Labour Market that the wage differential can be decomposed into the effects of individual characteristics and the effect of discrimination, which is estimated as the unexplained component (Oaxaca, 1973).

Both Oaxaca (1973) and Blinder (1973) recognize that there is an equal alternative equation for Equation (1) by choosing the other group as the reference group:

$$(2) \quad \bar{y}_1 - \bar{y}_0 = (\bar{x}_1 - \bar{x}_0)\beta_0 + (\beta_1 - \beta_0)\bar{x}_1$$

Also in Equation (2) the first term on the right hand side represents the explained component. However, Equation (2) yields different results compared to Equation (1). Researchers acknowledge this ambiguity of the Oaxaca-Blinder decomposition that is caused by choosing the reference group arbitrary (Elder, Goddeeris & Haider, 2010).

Another alternative and extension of the original Oaxaca-Blinder decomposition was developed. Oaxaca and Ransom (1994; 1999) suggested an alternative for solving the problem of the arbitrary choice of the reference group. Their alternative is an extension of the Oaxaca-Blinder decomposition, in which the decomposition is based on a pooled regression of the whole sample of the groups without the use of group-specific intercepts. This pooled regression is used alongside the two estimated single linear regressions per group (Neumark, 1988). Using the pooled estimator method of Oaxaca and Ransom (1994; 1999) and Neumark (1988) and letting p be the pooled group indicator, the equation is shown as:

$$(3) \quad \bar{y}_1 - \bar{y}_0 = (\bar{x}_1 - \bar{x}_0)\widehat{\beta}_p + (\widehat{\beta}_1 - \widehat{\beta}_p)\bar{x}_1 + (\widehat{\beta}_p - \widehat{\beta}_0)\bar{x}_0$$

Like Equations (1) and (2), Equation (3) decomposes the wage difference between the two groups in the effect of the part explained by observable characteristics at the first term on the right hand side and the unexplained component in the remaining terms. Equation (3) decomposes this unexplained component even further: the second term represents the advantage experienced by group 1, while the third term represents the disadvantage of group 0. By using this pooled estimator method, the outcome of the decomposition is not subject to the arbitrary choice of a reference group (Elder, Goddeeris & Haider, 2010). By presenting the equation alternatively and changing the reference group, the outcome of this Oaxaca-Ransom decomposition remains unaffected. This pooled decomposition has been the primary approach to determine the explained and unexplained parts of some empirical studies and therefore will be used in this paper to decompose the immigrant-native gaps within the Dutch labour market (Elder, Goddeeris & Haider, 2010).

3. Literature review

Some studies have already shown empirics in the subject of the payment differences between natives and immigrants in the labour market. In her paper of 1983, Reimers investigated the labour market discrimination against Hispanic and black men in the United States labour market (Reimers, 1983). She finds evidence for differences in wage offers between minority groups and American natives and that discrimination is an important source of the lower wages of Puerto Rican, black, Central and South American and ‘Other Spanish’ men (Reimers, 1983). However, for Mexican and Cuban men, labour market discrimination against these ethnic groups was not the main reason for the lower payments, but the difference in characteristics was the biggest source of the payment differences of these two minority groups compared to natives (Reimers, 1983).

Rooth and Ekberg studied in 2003 the differences in unemployment and earnings between second-generation immigrants in Sweden and native Swedes. In their paper they focussed on ethnic backgrounds and different parent compositions of the workers in the Swedish labour market. They found evidence that workers with a non-European background, and to some extent workers with a Southern European background, are more likely to be unemployed and generate lower earnings compared to native Swedes (Rooth & Ekberg, 2003). This effect for unemployment and annual earnings is even larger when both of the parents are born in these regions. The effect for unemployment is smaller when the mother is native-born in Sweden. It

seems that Swedish-specific human capital might cause success in employment in the Swedish labour market (Rooth & Ekberg, 2003). The difference in annual earnings for workers with South European and non-European parents is for the biggest part caused by ‘unexplained’ differences. For female workers with South European parents opposite effects for annual earnings are shown. For women with both of her parents born in Southern Europe, annual earnings are higher compared to native Swedes. With one parent born there, the annual earnings are lower than of native women. Only a small part of these differences is explained by observable characteristics, the main causes of these results are ‘unexplained differences’ (Rooth & Ekberg, 2003).

In their paper in 2008, Elliot and Lindley investigated immigrant wage differentials in the United Kingdom. They showed that a part of this wage gap could be explained by occupational segregation of immigrants and ethnic minorities (Elliot & Lindley, 2008). It was found that immigrants and workers from ethnic minorities are less likely to work in higher paid occupations compared to native English workers. Also, non-white immigrants and non-white natives generated lower earnings compared to white immigrants and white natives. Further, non-white immigrants are overrepresented in low-paid occupations. The biggest part of the differences in earning between white and non-white immigrants can be explained by historical, cultural and networking reasons or by issues of overeducation and discrimination in employment (Elliot & Lindley, 2008). Still there is a part of the payment disadvantage of ethnicity minorities and immigrants that remains unexplained (Elliot & Lindley, 2008).

Aeberhardt, Fougère, Pouget and Rathelot investigated in their paper of 2010 the immigrant-native gap in the French labour market, focussed on the differences in wages and employment workers with at least one African-born parent and French natives (Aeberhardt et al., 2010). They found evidence of this immigrant gap for both employment as wages between African immigrants and natives. The unexplained parts of this immigrant gap are much bigger for the difference in employment probability than the wage difference of the workers. 5 percent of the wage difference between French natives and first- or second-generation African immigrants remains unexplained, while around 47 percent of the employment difference between the two groups remains unexplained (Aeberhardt et al., 2010). It seems that discrimination against first- and second-generation African migrants in the French labour market is more present at the application for a job, than in the compensation during the job (Aeberhardt et al., 2010).

Similarly for the Netherlands, the native-immigrant wage differentials in the labour market have been studied. Like the other reviewed literature, Kee (1995) examined the explained and unexplained parts of the differentials between natives and immigrants, where he focussed on the difference in mean wages. Further, he divided the unexplained part of the wage difference in two components, focussing on the treatment advantage of the natives and the treatment disadvantage of the immigrants (Kee, 1995). Within his paper, he studied native Dutch, Antillean, Surinamese, Turkish and Moroccan male workers. Besides observable characteristics as schooling and experience, Kee included dummy variables for residential area, marital status and language proficiency. The study shows that educational attainment in the Netherlands and the number of years of experience in the Netherlands are the two most important factors contributing to the wage difference (Kee, 1995). Kee showed that discrimination might be present against Antilleans and Turks: 35 percent and 15 percent of the mean wage gaps respectively remains unexplained, while for Surinamese and Moroccans almost the whole wage gap can be explained by differences in observed characteristics. However, Kee's study suggests that the discrimination part for Moroccans is even negative, which means that the wages of Moroccans would exceed the wages of natives when having the same characteristics as natives. The native male treatment advantage is for only 0.3 percent points responsible for the wage gaps, meaning that discrimination against Antilleans and Turks is almost entirely caused by undervaluation of their characteristics, while characteristics of Moroccans seem to be overvalued (Kee, 1995).

Most of the empirical research about native-immigrants differentials in the labour markets has been done in the United States or countries in Europe. Only Kee investigated in his study the Dutch labour market. He performed his study with a Quality of Life Survey (CBS) for the immigrant group and a Labour Supply Panel of the Organisation for Strategic Labour Market Research (OSA) for the native group, both carried out in 1985 (Kee, 1995). The used dataset of Kee's study is therefore out-dated. To research the more recent immigrant-native gaps within the Dutch labour market and to investigate the labour market effects of the economic crisis for the immigrants and natives, a similar study will be done in this paper using a dataset originated from 2014. Further, compared to the variables of Kee some variables will be extended and added. In Kee's paper, Dutch language proficiency is added as a dummy variable, divided in having 'some' and 'much' difficulty in speaking the Dutch language. To gain more insight in the importance of the command of the native language, this variable will be extended to a variable with different levels of language proficiency, measured as a self-

assigned grade (1-10) by the respondent for their command of the Dutch language. Besides, an extra variable will be added for immigrants to include the different waves of the immigrant history of the Netherlands and to investigate the effect of the number of years being in the destination country. Per immigrant the time since their arrival is measured and added, a variable Kee has not included in his study. Further, Kee did not investigate the immigrant-native gap in employment, but focussed only on the wage differentials between immigrants and natives. This probability of employment will be added in this research. At last, overall there seems a lack of evidence of this immigrant-native gap in the labour market of the Netherlands and therefore an extra study is needed.

4. Data

In order to test the differentials between natives and immigrants in the Dutch labour market, we make use of the data of the LISS (Longitudinal Internet Studies for the Social Sciences) panel administered by CentERdata and are collected from the LISS data archive (Tilburg University, The Netherlands). From 2010 until 2014, an immigrant panel is included in addition to the LISS panel. This MESS immigrant panel consists of around 2600 individuals, including around 1600 households. 1700 individuals from this immigrant panel are of non-Dutch origin (CentERdata). The immigrant panel includes respondents of the four biggest groups of immigrants for the Netherlands; originated from Turkey, Morocco, Netherlands Antilles and Suriname. All immigrants are categorized as first- or second-generation respondents with a Western or a non-Western background. At last a group of Dutch natives is incorporated as a control group (CentERdata). The recruitment of the MESS immigrant panel is based on a true probability sample of households drawn from the population register in cooperation with Statistics Netherlands, stratified by country of origin. This random sample method is used to solve the problem of self-selection. A stratified refreshment of the immigrant panel is made to correct for the ethnicity bias and lower response from the respondents with a Moroccan and Turkish background (CentERdata).

Panel members are required to complete online questionnaires about different subjects and each year the LISS Core Study is carried out. Within this longitudinal LISS Core Study, topics as work, education, income, housing, time use, political views, values and personality are measured annually for a fixed panel of respondents (CentERdata). Also for the immigrant panel a large part of the LISS Core Study is conducted in the years 2010-2014. The most

important questionnaires of the LISS Core Study for the empirical research of this paper are *Economic Situation: Income* and *Work and Schooling*, with in addition relevant background variables of the members of both panels and remaining other important variables that are conducted from other questionnaires.

As mentioned before, data from the LISS Core Study for the immigrant panel is only available for the years 2010-2014. To base the research on the most recent possible dataset, the several background variables of the respondents within the immigrant panel are measured in the wave of December 2014, since the background variables are updated continuously. The choice of wave 2014-12 implies subsequently that wave 2 (2014) of the questionnaire *Work and Schooling* for the immigrant panel is incorporated and a single variable of the initial questionnaire in 2014. However, the two important variables command of the Dutch language and age when arrived in the Netherlands are measured in the years 2011 and 2013 respectively. These variables will still be incorporated into the research, because of their importance shown in empirical studies and the dataset. Since some respondents did not fill in the questionnaires in 2011 and 2013, some values of these variables are not available. The missing values will be adjusted in such a way that the inserted values are calculated by taking the mean values of the variable per category. For missing values of native respondents their age when arrived is equalized to 0, while the grade for their command of the Dutch language is set on 10 out of 10.²

Several conducted variables to determine the native-immigrant gap in the Dutch labour market and the corresponding descriptive statistics are presented in the table on the next page.³

² The adjustments made can be found in Appendix 1.

³ A complete list of all the conducted variables can be found in Appendix 2.

Table 1: Averages of the conducted variables categorized per group

Variable	Total	Natives ⁴	Immigrants ⁵	Western immigrants ⁶	Non-Western immigrants ⁷
Amount of individuals	2629	554	1157	571	586
Age	38.12	48.11	45.18	50.95	39.56
Monthly personal gross income	1021.20	1439.95	1429.31	1884.42	985.86
Tenure	11.51	12.73	10.86	12.80	8.69
Paid employment	751	276	471	244	227
Level of education	3.34	3.77	3.72	3.85	3.60
Command of the Dutch language	8.31	8.51	8.02	7.95	7.85
Time since arrival	34.07	45.20	31.88	36.98	23.27

As we can see in Table 1, several characteristics differ per group. The age profile of the immigrants and especially non-Western background immigrants is much younger compared to the one of the native group. Besides, the monthly gross income and the years of tenure of the immigrants group are significantly lower compared to the ones of the Dutch respondents. Overall, first- and second-generation Western immigrants generated a higher gross monthly income than Dutch natives. First- and second-generation non-Western immigrants earned far less than the respondents originated from the Netherlands. Therefore, this group seems the most important in analysing the native-immigrant wage gap of the Dutch labour market. Besides, the lowest monthly gross income is generated by the group originated from Morocco (529 euros), followed by respondents originated from Turkey (763 euros) and Suriname (997 euros). A much lower amount compared to the gross monthly income of 1440 euros of the Dutch natives. The level of paid employment is approximately the same for both (non-Western) immigrants as natives, similarly for the level of education. However, both mean

⁴ Identified as respondents with a Dutch background as origin.

⁵ Identified as respondents with Western or non-Western background (origin other than a Dutch background).

⁶ Respondents with Indonesia or other Western origin as country of origin are identified as Western immigrants.

⁷ Respondents with the following countries of origin are characterised as non-Western immigrants: Turkey, Morocco, Netherlands Antilles, Suriname and other non-Western origin.

levels are slightly lower for the non-Western immigrant group. The most respondents with a non-Western background have mbo (intermediate vocational education) as the highest level of education, compared to hbo (higher vocational education) as the highest level of education for the most respondents of the native group.

Given the descriptive statistics in Table 1, larger differences exist between native respondents and non-Western immigrants than between natives and the total immigrant group. It seems that Western immigrants weaken the size of the differential between natives and immigrants, since Western immigrants are in some variables advantaged instead of disadvantaged compared to the Dutch respondents. Therefore, the focus of the native-immigrant differential will be on non-Western immigrants, instead of the group of immigrants in total.

5. Methodology

One of the approaches mentioned in the theoretical framework for testing differentials will be used to determine the employment- and wage differentials between natives and immigrants. The choice of employment and wage is made to determine where discrimination might exist within the Dutch labour market: in the process of selection and entry of the job in terms of employment or in the compensation during the job in terms of wage. The differentials of both employment and wage are decomposed in effects explained by observable characteristics and remaining unexplained components. The approach that will be used for the decomposition of both the wage- and employment differentials is the pooled estimator method.

In order to calculate this pooled decomposition, two linear regressions are estimated for both wage and employment. Per subject a linear regression is estimated separately for immigrants and natives, and a pooled linear regression for the entire sample containing both of the groups. The equations for the regressions of wage and employment per group are estimated as follows:

$$(4) \quad \text{probEMPLOYMENT}_g = \beta_g^0 + \beta_g^i X_g^i + \varepsilon_g$$

$$(5) \quad \log WAGE_g = \beta_g^0 + \beta_g^i X_g^i + \varepsilon_g$$

with $g = 0, 1, p$

Letting g be the group indicator, 0 indicates immigrants, 1 indicates natives and p indicates the pooled group. β_g^0 and β_g^i show the intercept and coefficients of i variables per group g . X_g^i represents the vector of the independent variables, where the choice of the variables is based on the data of the MESS immigrant panel and empirical studies.

The decompositions for wage- and employment differences can be calculated via Equation (3) of the pooled estimator decomposition discussed in the theoretical framework:

$$(6) \quad \bar{E}_1 - \bar{E}_0 = (\bar{x}_1 - \bar{x}_0)\widehat{\beta}_p + (\widehat{\beta}_1 - \widehat{\beta}_p)\bar{x}_1 + (\widehat{\beta}_p - \widehat{\beta}_0)\bar{x}_0$$

with $E = probEMPLOYMENT_g$ and:

$$(7) \quad \bar{W}_1 - \bar{W}_0 = (\bar{x}_1 - \bar{x}_0)\widehat{\beta}_p + (\widehat{\beta}_1 - \widehat{\beta}_p)\bar{x}_1 + (\widehat{\beta}_p - \widehat{\beta}_0)\bar{x}_0$$

with $W = lnWAGE_g$.

The terms on the left hand side represent the total employment- and wage difference respectively between the groups of natives and immigrants. The first term on the right hand side represents the effect of individual characteristics on the employment- and wage difference and the last two terms on the right hand side shows the unexplained component. This unexplained component contains the advantage of Dutch natives represented by the second term, and the disadvantage of immigrants represented by the third term of the pooled decomposition (Elder, Goddeeris & Haider, 2010).

6. Results

In order to determine and decompose the employment- and wage differentials between natives and immigrants within the Dutch labour market, regressions of employment and wage have to be estimated for the groups of (non-Western) immigrants, natives and the pooled sample separately.

6.1 Regressions

Following Equations (4) and (5) of the methodology section, regressions are estimated per subject for each of the three different groups. The estimated regressions of employment are presented in the table below.

Table 2: Estimated regression results of employment categorized per group

$$probPAIDWORK_g = \beta_g^0 + \beta_g^1 AGE + \beta_g^2 GENDER + \beta_g^3 LEVELEDUC + \beta_g^4 TIMESINCEARRIVAL + \beta_g^5 COMMANDLANGUAGE + \varepsilon_g$$

	β^0	β^1	β^2	β^3	β^4	β^5
Non-Westerns	0.505 (0.006)***	0.000(4) (0.867)	-0.127 (0.012)**	0.076 (0.0000)***	0.000 (0.986)	0.004 (0.843)
Natives	0.917 (0.000)***	-0.012 (0.000)***	-0.075 (0.073)*	0.085 (0.000)***	0.001 (0.587)	0.009 (0.376)
Pooled	0.688 (0.000)***	-0.007 (0.000)***	-0.10 (0.002)***	0.085 (0.000)***	0.007 (0.499)	0.007 (0.476)

* 10% significance, ** 5% significance, *** 1% significance

As we can see Table 2, overall the first three characteristics age, gender and level of education seem to be significantly important in determining the probability of employment for both natives and (non-Western) immigrants, as well as the pooled sample. For natives and the pooled sample, ageing causes a negative effect on the probability of being employed. For immigrants there seem to be almost no effect of age on the probability of employment. However, this result is not significant. For all of the groups there is a significant result for lower levels of employment for females, compared to males. This effect of lower probabilities of employment for females seems to be larger for the group of (non-Western) immigrants. The level of education is significantly important for both natives and immigrants in effecting the probability of employment. This positive effect of the level of education on employment is larger for the group of natives than for the immigrants. Further, the independent variables ‘time since arrival’ and ‘the command of the Dutch language’ do not show significant effects on the probability of employment for natives, as well as for immigrants. The (insignificant) results show that these two variables even have small but more effect on employment for natives than for immigrants.

Besides differences in employment between natives and immigrants, differences in gross wages are also an important subject to investigate, since discrimination might also exist in the

compensation during the job. Besides, the descriptive statistics of the dataset in Table 1 show a relatively large difference in gross wages between natives and immigrants. Therefore, a regression has to be estimated for gross wages per group, to be able to decompose the wage differentials between natives and immigrants in section 6.2. The estimated regressions of gross wage per group are presented in the table below.

Table 3: Estimated regression results of the wage categorized per group

$$\log GROSSINC_g = \beta_g^0 + \beta_g^1 AGE + \beta_g^2 GENDER + \beta_g^3 LEVELEDUC + \beta_g^4 TENURE + \beta_g^5 TIMESINCEARRIVAL + \beta_g^6 COMMANDLANGUAGE + \varepsilon_g$$

	β^0	β^1	β^2	β^3	β^4	β^5	β^6
Non-Westerns	7.197 (0.000)***	0.002 (0.690)	-0.278 (0.002)***	0.133 (0.000)***	0.011 (0.087)*	0.008 (0.119)	0.002 (0.960)
Natives	7.730 (0.000)***	0.007 (0.258)	-0.581 (0.000)***	0.215 (0.000)***	0.006 (0.193)	-0.003 (0.553)	-0.025 (0.290)
Pooled	7.432 (0.000)***	0.004 (0.307)	-0.455 (0,000)***	0.179 (0.000)***	0.006 (0.108)	0.003 (0.261)	-0.009 (0.633)

* 10% significance, ** 5% significance, *** 1% significance

Different from the regressions results of probability of employment, the effect of age on gross wage is not significant for both of the groups. For immigrants, ageing leads to a small effect on their personal gross wage. The effect of age on gross wage is a little bit larger for natives, but remains relatively small. However, the characteristics gender and level of education affect the level of gross wage significantly, similar as the effect on the probability of employment. Females show a lower level of gross wages compared to males in the groups of natives, immigrants and the pooled sample of natives and immigrants. This negative effect on gross wages for females is now larger for the native group instead for the (non-Western) immigrant group, which was the case for probability of employment. Also for gross wages the level of education plays a significantly important role in affecting the level of the wages. A higher CBS category of level of education leads to a higher level of gross wage for both of the groups. However, this positive effect of the level of education on gross wage is larger for the native group than for the (non-Western) immigrant group. Further, the effect of tenure on gross wage remains small for both of the groups. This effect of tenure is significantly larger for the non-Western group, while the effect for natives remains smaller and insignificant. Hence tenure seems more important for determining the gross wage for the group of

immigrants than for the Dutch natives. The variable ‘time since arrival’ does not show significant effects on gross wage for both of the groups. Still it seems that the longer immigrants have been in the Netherlands, the higher the level of gross wages are. Therefore, the wage differential and the existence of discrimination could differ per immigration wave. For natives a small negative effect of time since arrival on gross wage is shown, which is not significant. The same effects are shown for command of the Dutch language, with a small positive effect for immigrants and negative effect for natives. Also here the effects are not significant.

6.2 Decompositions

Given the estimated equations of employment and wage per group given in Table 2 and 3, the employment- and wage differential between Dutch natives and non-Western immigrants can be further decomposed. Following the pooled estimator decomposition in Equations (6) and (7) of the methodology section, the Oaxaca and decompose tool of Stata is used to determine this pooled decomposition of the native-immigrant differentials per subject (Jann, 2008; O’Donnell et al., 2008). The decompositions of the employment- and wage differences between natives and immigrants are presented in the several tables below.

Table 4: Contribution of the independent variables to the explanation of the employment differential

Variable	Part explained by variable	Percentage of total explanation
Intercept	0.000	0.00
Age	-0.065	382.35
Gender	0.005	-29.41
Level of education	0.017	-100.00
Time since arrival	0.022	-129.41
Command Dutch language	0.005	-29.41
Total	-0.017	100.00

In the Table 4 the explained part of the decomposition of the employment differential is shown, containing the contributions of each of the independent variables separately to the explanation. The first thing we see is that the part explained by differences in age is relatively large and also negative, meaning that immigrants are here in favour. The variable age explains a native-immigrant gap in the opposite direction: a positive gap for (non-Western)

immigrants. This means that according to the independent variables immigrants should have a higher probability of employment than the natives. The remaining numbers show how much the other independent variables included in the regression contributed to the explained part of the native-immigrant employment differential. As we can see, differences in ‘time since arrival’ explains the biggest part of this gap (and age), followed by level of education and gender and ‘command of the Dutch language’ both on the last place. Overall, when summing up the individual contributions of the variables, the explained part of the employment differential shows a difference in probability of employment that is positive for (non-Western) immigrants.

Table 5: Decomposition of the total employment differential

$$\bar{E}_1 - \bar{E}_0 = (\bar{x}_1 - \bar{x}_0)\widehat{\beta}_p + (\widehat{\beta}_1 - \widehat{\beta}_p)\bar{x}_1 + (\widehat{\beta}_p - \widehat{\beta}_0)\bar{x}_0$$

Total employment differential	Explained part	Unexplained part	Advantage natives	Disadvantage immigrants
0.057 (5.7%)	-0.017 (-1.7%)	0.074 (7.4%)	0.035 (3.5%)	0.039 (3.9%)

When further analysing the total employment differential results in Table 5, the biggest part of the native-immigrant employment gap cannot be explained by the independent variables. The major part of the employment differential remains unexplained. Combining the -1.7% difference of the explained component and 7.4% of the unexplained component, results in an overall total employment differential between natives and immigrants of 5.7%. The unexplained component of 7.4% is almost equally divided in an advantage for natives of 3.5% and a disadvantage for (non-Western) immigrants of 3.9%. The disadvantage of immigrants accounts for the major part of the unexplained component.

Table 6: Contribution of the independent variables to the explanation of the wage differential

Variable	Part explained by variable	Percentage of total explanation
Intercept	0.000	0.00
Age	0.019	17.27
Gender	-0.026	-23.64
Level of education	0.044	40.00
Tenure	0.022	20.00
Time since arrival	0.059	53.64

Command Dutch language	-0.008	-7.27
Total	0.110	100.00

When looking at the results of the decomposition of the wage differential between natives and immigrants in Table 6, several important results are shown. Differences in the variable ‘time since arrival’ explain the biggest part of the wage differential, compared to the employment differential where age was the most important contributor. Time since arrival is followed by the level of education, tenure and age. Similarly to employment, negative numbers are shown within the explanation of the wage differentials. Differences in the variables gender and ‘command Dutch language’ explain a wage differential in the opposite sign, meaning a higher level of gross wage for immigrants. In total the observed characteristics explain a native-immigrant wage gap of 11%, in favour of the Dutch natives.

Table 7: Decomposition of the total log wage differential

$$\bar{W}_1 - \bar{W}_0 = (\bar{x}_1 - \bar{x}_0)\widehat{\beta}_p + (\widehat{\beta}_1 - \widehat{\beta}_p)\bar{x}_1 + (\widehat{\beta}_p - \widehat{\beta}_0)\bar{x}_0$$

Total wage differential	Explained part	Unexplained part	Advantage natives	Disadvantage immigrants
0.125 (12.5%)	0.110 (11.0%)	0.015 (1.5%)	0.006 (0.6%)	0.009 (0.09%)

The biggest part of the total native-immigrant wage differential of 12.5% can be explained by the individual characteristics of the respondents: 11%. The other 1.5% of the wage gap remains unexplained. This unexplained component of 1.5% can be divided again in an advantage for natives (3.5%) and a disadvantage for immigrants (3.9%). Also within the decomposition of wage gap, the disadvantage of the immigrants accounts for the major part of the unexplained component.

To summarize, immigrants experience disadvantages in both employment and gross wage. However, the explanations of both of the differentials differ. Within the employment differential the major part could not be explained, while within the wage differential the biggest part could be explained by the individual observable characteristics of the respondents. It seems that discrimination might play a bigger role in employment than in wages.

7. Conclusion

When the economic crisis affected the employment rates of the four biggest non-Western immigrant groups of the Netherlands the most, questions came up about the labour market positions of these (non-Western) immigrants compared to the Dutch natives. Differences in employment rates and levels of wages between natives and immigrants existed in the Dutch labour market. Therefore, the research question of this paper was: *To what extent do non-Western immigrants in the Netherlands experience labour market disadvantages in employment and wages compared to natives and how much of this is due to differences in observable characteristics and how much remains unexplained?*

In order to answer this research question, data of the MESS immigrant panel (administered by CentERdata) is conducted (Tilburg University, The Netherlands). This immigrant panel included first- and second generation immigrants of the four biggest non-Western groups in Netherlands, with a group of Dutch natives incorporated as a reference group. Using the data, regressions and differentials are estimated and calculated. The employment- and wage differentials are further decomposed according the method of Neumark (1988) and Oaxaca and Ransom (1994; 1999). Results show that employment- and wage differentials between natives and immigrants exist within the Dutch labour market: 5.7% in probability of employment and 12.5% in the level of gross wages. Using the pooled estimator decomposition method, it is found that the biggest part of the employment differential could not be explained by the observable characteristics of the native and immigrant respondents. On the other hand, the major part of the wage differential could be explained by the independent variables. This means that discrimination in the Dutch labour market might play a bigger role in the hiring process than in the compensation of the immigrant workers. The results of the wage differential are comparable to the ones of Kee (1995), since he also showed that the major part of the differential could be explained by characteristics and a smaller part remained unexplained, but somewhat different results of the decomposition are shown. However, the results of the employment differential are new and not comparable to the analysis of Kee.

The results of this paper have certain policy implications for the Dutch government and labour market. The existence of discrimination reduces the possibility for immigrants to further integrate into the Dutch society. Therefore, the problems immigrants face in the hiring

and job entry process in the Dutch labour market need to be included in integration policies. Examples are building a CV, improving information about the Dutch labour market or providing volunteer opportunities for immigrants before entering the hiring process. Also the problems immigrants are facing during the job in terms of wages need to be looked at, since there is still a part of the wage differential that remains unexplained. Also policies for the people on the other side of the labour market could be implemented, like improving the available information or knowledge for employers about the quality of education and experience in the home countries of the immigrants.

Nevertheless, this research has certain weaknesses. The first shortcoming is the lack of data for certain respondents. Since different questionnaires are used for the composition of the different variables, only the respondents who answered all of the questionnaires are included into the research. Still some respondents did not fill in the questionnaires completely or did not know the answer. Because of the lack of data, values for the variables 'time since arrival' and 'command of the Dutch language' are adjusted for missing values, based on age, gender and origin. These adjustments could cause a bias in the results. Further research should be based on a more complete dataset with answers for all of the respondents. Besides, not many respondents filled in the questionnaire in which the variable 'nationality' is measured. Therefore, this variable was dropped out of the research. However, it could still be an important factor in determining the probability of employment, level of gross wage and its effect on both of them. Further research should find out whether this is the case. The last shortcoming concerns the automatically generated variable 'paid work'. This variable is based on the question of primary occupation and categorized as positive when respondents filled in 'paid work' as primary occupation. The remaining categories of primary occupation thus are not considered as 'paid work'. Therefore, an underestimation of the probability of employment could occur, since categories as 'performs unpaid work while retaining unemployment benefit', 'performs voluntary work' and 'is too young to have an occupation' will be seen as unemployment. For further research, a more precise definition of 'paid work' or 'employed' should be taken into account. At last, a similar research could be done with natives and Western immigrants, since the descriptive statistics of the dataset show that Western immigrants generate a higher level of gross wage and have advantages in certain variables.

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Appendix 1 – Adjustments dataset

Modified variable	Category	Inserted value
Age when arrived	Male and female natives	0
Time since arrival	10-20 male non-westerns	10
	20-30 male non-westerns	13.2
	30-40 male non-westerns	21.77273
	40-50 male non-westerns	29.82051
	50-60 male non-westerns	31
	60-70 male non-westerns	39.05882
	10-20 female non-westerns	13
	20-30 female non-westerns	17.69231
	30-40 female non-westerns	20.41935
	40-50 female non-westerns	25.44681
	50-60 female non-westerns	31.2
	60-70 female non-westerns	35.13636
	Command Dutch language	Male and female natives
10-20 male non-westerns		8.235294
20-30 male non-westerns		8.076923
30-40 male non-westerns		8.205882
40-50 male non-westerns		8.090909
50-60 male non-westerns		7.653846
60-70 male non-westerns		8.090909
10-20 female non-westerns		8.157895
20-30 female non-westerns		7.745455
30-40 female non-westerns		7.960784
40-50 female non-westerns		8.155556
50-60 female non-westerns		8.187500
60-70 female non-westerns		7.687500

Appendix 2 – Conducted variables dataset

Conducted variables for the immigrant panel:

- GESLACHT – gender
- LEEFTIJD – age of the household member
- BRUTOINK – personal gross monthly income in Euros
- OPLCAT – level of education categorized by 6 CBS (Statistics Netherlands) categories: primary school, vmbo (intermediate secondary education, US: junior high school), havo/vwo (higher secondary education/preparatory university education, US: senior high school), mbo (intermediate vocational education, US: junior college), hbo (higher vocational education, US: college) and wo (university).
- HERKOMSTGROEP – origin categorized by: Dutch background, first generation foreign Western background, first generation foreign non-Western background, second generation foreign Western background and second generation foreign non-Western background.
- HERKOMSTLAND – country of origin categorized by: The Netherlands, Turkey, Morocco, Netherlands Antilles, Suriname, Indonesia, Other Western and Other non-Western (all first or second generation).
- JI13A045 – answer on the question ‘How old were you when you arrived in the Netherlands?’ This variable is only measured in June 2013 in the theme questionnaire ‘What drives or inhibits the development of interethnic contacts?’ for the immigrant panel.
- FE14A114 – answer on the question ‘What is your nationality?’ Categorized by: Dutch, other or double nationality (Dutch and other).
- FP11A010 – numeric answer on the question ‘What grade would you assign yourself for your own command of the Dutch language?’ This variable is only measured in October 2011 in the theme questionnaire ‘Living in the Netherlands’ for the immigrant panel.
- GU14B525 – primary occupation categorized by: paid employment, works or assists in family business, autonomous professional/freelancer or self-employed, job seeker following job loss, first-time job seeker, exempted from job seeking following job loss, attends school or is studying, takes care of the housekeeping, is pensioner (voluntary/early retirement/old age pension scheme), has (partial) work disability,

performs unpaid work while retaining unemployment benefit, performs voluntary work, does something else, is too young to have an occupation.

- GU14B001 – answer on the question ‘Does respondent have paid work?’ Automatically derived from the answer on the question of primary occupation. Only the answer ‘paid employment’ as primary occupation is considered as relevant for the analysis in this paper, given the fact that occupations categorized as ‘works or assists in family business’ or ‘self-employed’ might bias the analysis of discrimination in the hiring process and compensation of the job in the Dutch labour market, since respondents are hired and compensated by their family or themselves within these categories.
- GU14B134 – answer on the question ‘In which year did you enter into employment with your current employer?’
- GU14B501 – starting date of the questionnaire

Generated variables immigrant panel:

- TENURE – year of filling in the questionnaire (2014) minus GU14B134 (year of entering into employment with current employer). As mentioned in the theoretical and empirical analysis, experience is also an important factor in determining the native-immigrant gap. The variable tenure is chosen to include, since collinearity appears when experience is measured as LEEFTIJD (age) – OPLCAT (level of education). Nevertheless, age and the level of education are included as individual variables.
- TIME SINCE ARRIVAL – LEEFTIJD (age) minus JI12A045 (age when arrived in the Netherlands). Based on the variable JI12A045 that is measured in 2013. For native respondents the age when they arrived in the Netherlands is equalized to the age of 0, which means that the time since arrival is set equal to the age of the respondent.