

**The effect of country of birth and gender on individuals' wages in different countries' labour markets.** Identification of the independent variables with the help of controls and a comparative research design.

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## **The effect of country of birth and gender on individuals' wages in different countries' labour markets. Identification of the independent variables with the help of controls and a comparative research design**

**Abstract.** In most sciences, causation is explained with the formula  $X + Z = Y$ . When X is held constant, changes in Y can be explained only in so far as Z changes. In this paper, values of both X and Y are known, as well as the Z variables. Values of Y change even when X is held constant. In this paper, an explanation for changes in the values of Y are pursued. Z variables are standardised so that only one of them changes at a time, when only that change can explain changes in Y.

As applied in this paper, X is formal education and Y is wage. According to previous statistical and research evidence, the most crucial Z variables are 1) immigrant group (in this design: country of birth), 2) gender and 3) labour market context. The relationship between X and Y is elaborated with these three variables. Empirical analysis is not done. The result is a standardising method, which is a combination of those previously used in migration studies; these have been developed and used by Nancy Green, Jeffrey G. Reitz, Floris Vermeulen, Inge van Nieuwenhuyze, etc. The analysis shows the actual impact of country of birth and gender on the target groups' wages in different labour market contexts. The results are internationally comparative.

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This is a concept paper, a preliminary paper for a forthcoming article. Comments are welcome. This is the same paper held at the IMISCOE conference, except for the first two pages. The page numbers are identical. Appendices 1-4 have not been proof-read, other parts of the paper have. To refer to this presentation: Salmenhaara, Perttu (2012) The effect of country of birth and gender on individuals' wages in different countries' labour markets. Presentation at the 9th annual IMISCOE conference, Amsterdam, 29 August 2012.Helsinki: Perttu Salmenhaara. (ISBN 978-952-67853-0-1 . Available at <http://salmenhaara.eu> ).

## 1. Introduction<sup>i</sup>

A shared problem across the sciences is to make sense of correlational data coming from observations and/or from experiments. Arguably, this means establishing when correlations are causal and when they are not. (Russo 2011, 86)

According to statistics from the OECD area, individuals' education level correlates positively with wage (e.g. OECD 2011, 135-157; for more evidence and theory, see below). This paper seeks to establish whether the correlation is causal. This is done by elaborating the relation between education level and wage.

The structure of the paper is as follows. After this introduction, section two describes the research design and the context of previous research to which the design is applied. The actual elaboration begins from the third section, which presents the paper's hypothesis about the relation between formal education and wage. This hypothesis determines in detail the method and data needs, which are described in sections four and five. The migration-specific application is the result of this paper and it is pulled together in section six.

## 2. Establishing causality and an immigration-specific application

### 2.1. Establishing causality

When causations are sought from among correlations, first one must distinguish, for example, X from Y:

- X, i.e. the independent variable (in this paper, education level);
- Y, i.e. the dependent variable, which X is assumed to affect (in this paper, wage); and
- Z, i.e. a third variable that potentially affects the relation between X and Y (several in this paper) (Kenny 1979, 3-5; Hill 1965). In social sciences, also Z is sometimes represented by X, such as in Giddens, Duneier, Appelbaum et al. (2009, 32-33), but in this paper, third variable is represented by Z.

It is essential to elaborate the relation between X and Y in order to discover out possible third variables. Of the many ways in which elaboration can be done, I apply a standardising method. When one searches for causations by standardising in this way, it means that some variables are held constant in order to show the impact of others. Example: If X was constant but Y still changed, only the Z variable(s) could cause the change. Therefore, if X equalled 1, Z equalled 2 and Y equalled 3, calculation  $X+Z = Y$  equalled  $1+2=3$ . If X was kept constant but Z changed, also Y changed:  $1+3=4$ .

In the real social world, this kind of simple causation rarely comes about, however. There can be more than one Z variable and often there are, too. In social science the number of independent variables (both X's and Z's) is much greater than in "hard sciences", such as mathematics and statistics (Russo 2011, 86; Cinkaid 2001, 726, 728; Beebee, Hitchcock & Mentzies 2009). In the words of Russo (2011, 86):

[I]n laboratory experiments, ideal conditions are more often met because uncontrolled variations in the environment are much better known. On the contrary, if the social scientist cannot directly manipulate the data, how can she infer what is the causal story behind the observed correlations? What is peculiar to the social sciences is that they most often deal with observational rather than experimental data. The usual

situation the social scientist is confronted with is having a data set coming from surveys, interviews, or censuses, and no possibility to directly intervene on the data.

Often there are thus many  $Z$  variables, all of which are not even known. That makes it difficult to evaluate their possible impact on  $Y$ . The number of  $Z$  variables has to be made smaller so that we can apply the  $X+Z=Y$  formula.

The search for causal relations can be done in several ways. In statistical science, the making of causal hypotheses is usually based on exact correlation or regression calculations. However, I apply a non-mainstream (Bayesian) method, in which a causal hypothesis is based on evidence from previous studies and statistics (Koop, van Dijk & Herman 2011).

In the case of this paper, a three-phased elaboration is chosen in order to first reduce the amount of independent variables and then to show how the remaining ones affect  $Y$ . In other words, we need a few phases before the actual analysis. This paper seeks to build a frame for such an analysis. The analysis itself is not carried out.

Russo (2011, 91-94) separates certain phases through which it can be revealed which of the perceived correlations are causations (figure one). I apply this structure from the third section onwards, that is, after I have described the context of previous research. This structure is the first building block of the elaboration method that will be developed in this paper. The two other ones constitute step in the last phase: two standardising methods, one by Green (1994; 1999; Vermeulen 2005; 2006) and another one by Reitz (1998).

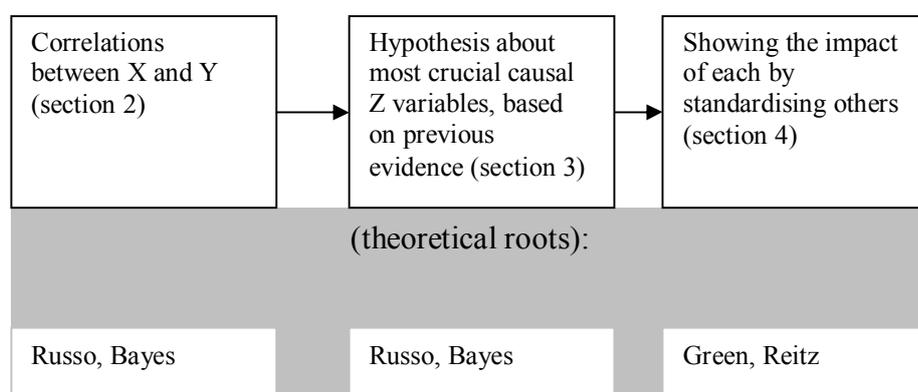


Figure 1. Elaboration: theory. Building blocks of the method.

Russo's (2011) formula also has a fourth phase (testing of the validity of the results) but that phase is not included here. In the application of the paper at hand, the two phases on the left are known on the basis of previous evidence. With the help of this "Bayes/Russo method", it is therefore possible to isolate the most important third variables, after which the impact of each can be isolated by holding the others constant. Next, I will describe the case to which this approach will be applied.

## 2.2. Immigration-specific application

When the above-described elaboration method is applied to a specific discipline and a specific subject within that discipline, it is crucial to take into account previous research that has been done about that very subject in that very discipline.<sup>ii</sup> In migration studies, a survey of the previous

literature shows that the general scientific elaboration method has rarely been applied in migration studies. A “translation” is presented below in table one.

<b>Rhetoric in hard sciences</b>	<b>Rhetoric in migration studies</b>
Third variables do not affect X-Y relation (the null hypothesis)	Equality of opportunity (based on neoclassical theory)
Third variables affect relation	Inequality of opportunity (based on empirical evidence)

*Table 1. Third variables in hard sciences and in migration studies: conceptual difference.*

Most of the previous immigrant-specific studies about labour-market stratification can be fitted into this frame of analysis. When this approach is used, previous migration studies can be divided into two the two paragraphs of the table. Described below are these two approaches.

*The neoclassical, mainstream hypothesis: third variables affect minimally*

From its 19th century origins, migration studies have operated on the basis of these two paradigms. The one that denies the impact of third variables has been dominant since the advent of international migration studies.. In the words of Bommers & Kolb (2007, 104; Ravenstein 1885): “[t]he oldest, most traditional and prominent economic theoretical approach in migration research is based on [the neoclassical paradigm].” Ravenstein, who is usually argued to be the founding father of studies of international migration, can be traced back to this tradition (ibid. 104; Ravenstein 1885).

Ravenstein (1885) determined certain “laws of migration”; the laws themselves are not so important concerning this paper but they describe the theoretical roots of migration studies. The roots lie, to a large extent, in neoclassical economic theory.

The approach mentioned above has changed little since it was invented.. The only major difference is that since the 1960s, education has been considered to correlate strongly with wage and cause both international migration as well as labour market stratification. The roots of this argument are, firstly, in Bell’s (1999 [1973]) theory of the post-industrial society and secondly, in Becker’s (1999 [1964]) human capital theory.

This theory considers differences in the supply and demand for labo[u]r in sending and receiving countries, and sees workers moving in response to higher wage rates... workers are seen as moving to maximise the returns on their “human capital”. (Stalker 2000, 131)

According to this combination, individuals' characteristics (education, work experience, family background) (Becker 1993 [1964], 15-17) would determine returns on their individual competences, and the most important one of these resources would be formal education. The theory has developed remarkably since Becker's times but education is considered the main human capital variable (see appendix 2).

The human capital theory (Becker 1993 [1964]) is a part of the "Chicago School" of neoclassical economics (Becker 1993 [1964]).<sup>iii</sup> The founding father of the human capital theory argues that

Education and training are the most important investments in human capital ... high school and college education greatly raise a person's income, even after netting out direct and indirect costs of schooling, and after adjusting for the better family backgrounds and greater abilities of more educated people. ... The earnings of more educated people are almost always well beyond average. (Becker 1993 [1964], 17)

According to Bell (1999 [1976]), 143), in the post-modern economy, workers have a much higher degree of educational attainment than in the modern economy. This would be because post-industrial production processes would require better skilled labour and to a large extent, stratify labour markets on the basis of an individuals' education (Bell (1999 [1976], 143; Becker 1993 [1964]).

All three theories – Ravenstein's (1885), Borjas' (1985; 1989) and Becker's (1993 [1964]), are based on the mainstream paradigm, on the assumption that third variables, such as country of birth, gender, age, etc would have a minimal impact on both income as well as on migrations between labour markets. Individuals' human capital, mainly education (appendix 2) would determine their income:  $X \rightarrow Y$ .<sup>iv</sup>

The human capital theory has developed since Becker's formulations so that all parts of the human capital theory no longer completely reject the impact of third variables (appendix 2; Acemoglu & Autor 2009).

*Shortcoming of the neoclassical theory: causality assumed on the basis of correlation (post hoc ergo propter hoc)*

The neoclassical explanation of labour-market inequality is basically that individuals would have different labour-market resources, namely human capital. Explaining these gaps has been challenging for neoclassical economics, because, if education level (X) does not explain salary (Y), and third variables (Z) had no effect, nothing can explain the gaps. Country-specific human capital has been suggested as being the missing independent variable.

Education level would not be the independent variable that would change, but instead other forms of human capital would be what changes. From an empirical point of view, this hypothesis is where the Z variables come into the picture. Education level (X) would remain constant and country-specific third (human capital) variables explain why Y changes.

The hypothesis runs along the lines that the impact of human capital on wage would depend on length of residence in the country of immigration. Residence in the country of immigration would increase "country-specific human capital", that is, work experience and education received in the country of immigration, and language fluency in the mainstream language(s). These individual resources would increase wage. Thus education level (X) would remain constant and changes in

country-specific human capital ( $Z$ ) would, for the most part, explain changes in immigrants' wage ( $Y$ ).

This hypothesis does not necessarily contradict the hypothesis presented in previous empirical research, which is abstracted in this paper at hand. More or less all different theories and empirical measurements have suggested partial correlations and suggested partial causations. Therefore this hypothesis may bring us closer to the solution: which independent variables cause wages, i.e. the values of  $Y$ ? Which are the third variables?

There are two reasons why I choose not to measure country-specific human capital. The reasons are, firstly, that the concept suffers from blurry definitions, in accordance with the problem that these suggested third variables are difficult to measure empirically. In other words, the exact variables are not known. Secondly, for the same reason, it is not clear, where the line between country-specific human capital and discrimination goes.

In figure two, this problem is illustrated with an example about how length of residence *correlates* positively with immigrants' wages (figure two) and what is the neoclassical/human capital explanation of the *cause*.

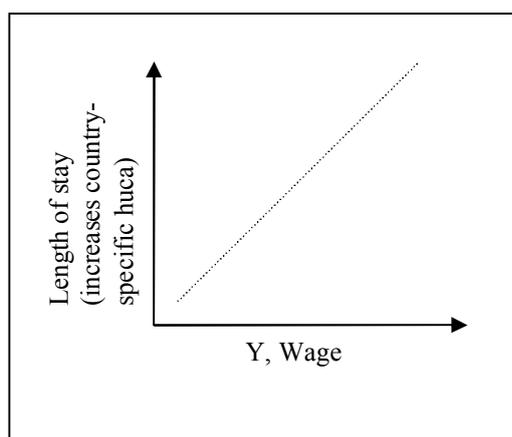


Figure 2. Example. Positive correlation between length of residence and wage.

This correlation has been shown by numerous studies, most famously by Chiswick (1978) and Borjas (1989). Evidence from longitudinal cohort analyses shows that the positive correlation is a universal feature of the immigrant integration process: according to statistical data, immigrants' wages assimilate closer to the general wage levels on the receiving country's labour market. This positive correlation can be seen for instance from OECD statistics (see below the section about data): newly arrived immigrants usually have wage levels well beyond their educational attainment. The causal hypothesis is difficult to prove or disprove with empirical data. Indeed, it has been sought to both prove and disprove the hypothesis with the use of controls and the results point in opposite directions: it seems to be a question of which variables are controlled for.

From the 1990s onwards it has been argued that language skill would be a human capital variable (Dustmann 1999). Language skill refers precisely to skill in the official language(s) of the country of immigration; therefore, it can be claimed that poor language skill would be one of the reasons why foreign-born people would hold jobs that require less education than they have:

[i]t is ... noteworthy that, when one controls for the literacy level, the effect [of education level on labour market status] associated with the 'immigrant' variable diminishes. Even if no causal relationship can be deduced, this result implies that some of the aspects of human capital, which are not included in the level of education, may affect over-qualification. Yet in Australia, as in Europe, the 'immigrant' variable remains very significant and exerts a major influence.... Ferrer, Green and Riddell (2004) arrive at similar but more pronounced results for Canada, using the Ontario Immigrant Literacy Survey (OILS). They show that immigrants' literacy scores are on average lower than those of native-born workers, and that this explains about two-thirds of the earnings gap. (OECD 2007, 166)

Controls also have been used to measure the part that the country-specific human capital does not explain:

Migrants ... have considerably higher unemployment rates and lower wage incomes than native[s] .... Although reduced, a significant gap remains when controlling for human capital factors (such as education) and for so-called 'country-specific' human capital factors (such as years spent in [the country of immigration]). (Rydgren 2004)

Lancee (2012) arrives at a similar result after controlling for country-specific human capital variables. The question is not, did length of stay and language skill have an effect on wage: they do, the positive correlation is a statistical fact. The question is instead, was the third variable country-specificity of human capital, or the third variables suggested by empirical studies.<sup>v</sup>

### **3. Hypothesis about the third variables, based on previous empirical evidence**

Now I have described the context of previous research, in which we apply the "Bayes-Russo elaboration method". Next, I will apply the method.

Since the early 1990s, the body of empirical evidence against the theory-based causal hypothesis has grown for the most part because of the use of comparative research designs. These designs have been common especially in European migration studies, after the European Union started to coordinate research activities in some of its member states (see <http://www.imiscoe.org>).

Comparative research designs have shown that many previous theories about causations in the integration process do not stand empirical testing.

For instance, one of the most classic theories about the integration process, by Piore (2008 [1979]), suggested that the migration and integration processes would have certain phases that would be common to all migrant groups and receiving countries. Van Nieuwenhuyze (2009) did a comparison about the integration process in two cities, so that she compared a) a single relatively homogenous immigrant group in two cities (divergent comparison) and b) two relatively different immigrant groups in one city (convergent comparison). The results showed that the same group integrated differently in different contexts and also that different groups integrated differently in the same context. Not only does this result throw into question Piore's (2008 [1979]) theory, but it is yet again one obvious proof of the impact of third variables on the integration process.<sup>vi</sup>

Evidence concerning the impact of third variables existed already before the use of comparative research designs (e.g. Portes & Bach 1984; <sup>vii</sup> Portes & Sensenbrenner 1993) but this evidence has

been fragmentary (Penninx 2010) and these separate studies usually focused only on one immigrant community, producing results throughout, but results that concern only the studied immigrant group in the studied societal context (Green 1994; 1999). Comparative studies have produced crucial information about the impact of third variables, information that is not limited to only one case or one context. Thus we have some systematic evidence of the impact.

### *Previously shown causations*

Independent variables that correlate positively with immigrants' wages are myriad. There are so many that at this point of elaboration, I move directly on to Russo's (2011) phase two, selecting ones that previous research has shown to have a causal relation with the dependent variable Y (income). For the sake of clarity, it is necessary to classify the independent variables to the X and the Z variables. This distinction has to be made in order to elaborate the relation between X and Y.

In appendix 4, I discuss whether it is correct to equate education with X; in short, they are equalled in this paper for two reasons: 1) education is the dominant component of human capital and 2) other components of human capital are difficult to measure because they lack specific definitions, such as in the case of the language skill issue: is it a component of human capital, even though previous research has shown it is used as an excuse for ethnic discrimination in recruitment?

When searching for the variables that have the most effect, these causal variables can be divided into the two above-mentioned groups: the one group comprises X (education and other individual, supply-side variables which are not taken into account here) and the other comprises Z variables (these are often called structural, demand-side variables (e.g. Kraal, Roosblad, Wrench et al. 2009)).

According to previous evidence, X variables (supply-side variables) comprise 1) the formal education level, 2) official work experience, 3) family background and 4) language skill (Becker 1993 [1964]; Dustmann 1999; Dustmann & Fabbri 2003; Acemoglu & Autor 2009).

The Z variables, again, include, for instance, 5) economic fluctuations (Massey et al. 2005; Knocke 2008; Pekkala Kerr & Kerr 2011), 6) demand and supply of labour in different sectors of activity and at different education levels (eg. Stalker 2000, 135), 7) labour market segmentation (Portes & Bach 1980; Massey et al 2005 [1998], 31; Piore 2008 [1979], 35-43), 8) actions of labour unions (Penninx & Roosblad 2000), 9) labour-market regime, i.e. the heaviness of state intervention in labour-market transactions, or "rigidness" of the labour market (van Nieuwenhuyze 2009), because that affects immigrants' dependence on 10) co-ethnic immigrant networks and the sizes of immigrant communities in the receiving country (Portes & Bach 1980; Massey et al. 2005 [1998], 31; Portes & Sensenbrenner 1993; Kloosterman, van der Leun & Rath 1999; Lancee 2012; van Nieuwenhuyze 2009; Ahmad 2005; Behtoui 2006), 11) discrimination on several different grounds (appendix 3; Nilsson & Wrench 2009; Rydgren 2004; Kofman, Roosblad & Keuzenkamp 2009; Ahmad 2005; Behtoui 2006; Makkonen 2010), 12) a person's age,<sup>viii</sup> 13) family status (Waldfoegel 1998), 14) country of birth, 15) legal status at entry (Constant & Zimmermann 2005), 16) ethnicity, and so forth.

The list of independent variables could be continued endlessly. Many of these variables also have a cumulative impact, such as age, labour-market context and more or less any of the other ones, and country of birth and gender. In addition, grounds for discrimination are many: discrimination on the basis of handicap, religion or belief, and so forth (Makkonen 2007; Wrench 2011). The claim that third variables would not affect wages appears rather interesting indeed.

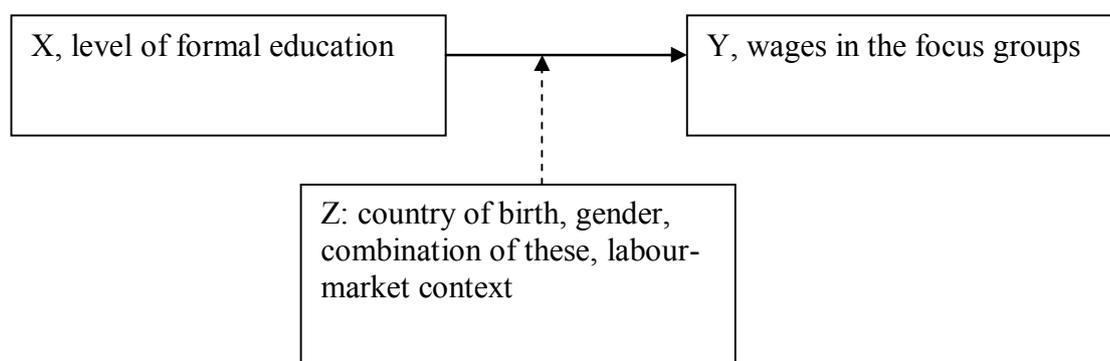
This type of large number of independent variables is the special characteristic of social science when compared to other sciences, that Russo (2011, 86) mentions. It is not possible to manipulate them so that we could isolate the impact of each, i.e. separate the effect of X variable from the impact of Z variables. This can be done by standardising but in order to standardise, the number of independent variables must be reduced. This is where the application of the Bayesian method (Koop & van Dijk 2011) steps in.

*Elaborating the method: the most important causations*

According to previous research and statistics, a set of third variables with the most potent effect would be

- 1) immigrant group, including the social networks of its members (Green 1994; 1999; Vermeulen 1995; 1996; Reitz 1998; van Nieuwenhuyze 2009; Lancee 2012; appendix 4);
- 2) gender, (Adsera & Chiswick 2004; Kofman, Roosblad & Keuzenkamp 2009; Anthias & Yuval-Davis 2010; Reitz 1998; Bevelander 2005);
- 3) the combined impact of immigrant group and gender (Reitz 1998)
- 4) the immigration country's labour-market regime and welfare-state regime (Green 1999; 1994; Caponio 2010;<sup>ix</sup> van Nieuwenhuyze 2009, 32; regime classification: Esping-Andersen 1990).

Thus on the basis of previous research evidence, we have identified the most crucial causal variables and can move now on to the hypothesis that corresponds to the second phase in Russo's (2011) analysis.



*Figure 3. Elaboration: application of the method.*

#### **4. Method**

In this paper, the objective is to show the actual impact of formal education in different labour-market groups and labour-market contexts. The research design and target groups have been chosen to serve this end. Now that the four most prevalent third variables are known, it is possible to build a comparative research design, a design that in the natural sciences might have been established right in the beginning.

In this comparative design, the causal impact of each third variable is shown by holding other variables constant. It should be noted that in social sciences, it is not possible to control contextual variables as perfectly as in laboratories (Russo 2011) and that because of this the analysis cannot be as precise. The four Z variables are only the ones that have been shown to have the greatest impact on the correlation between X and Y: there are tens of others, as noted in the third section.

The theoretical roots of the analysis are two-fold. These two are combined in order to answer two questions: why and what, i.e. what Y actually is, how to measure it and why it is like that (X, Z). The X and Y variables are placed in a context that allows comparisons between contexts and elaboration of the relation. Firstly, Green (1994; 1999) addresses why wages are like they are and why this kind of elaboration is needed to answer why; and Reitz (1998) answers what the wages are and how they should be measured to see the big picture.

The first root that answers the why-question is an article by Green (1994). It argues that the impact of the context and of the immigrant group can be isolated by doing two comparisons, a divergent and a convergent (Vermeulen 2006, 15; 2005, 951; Green 1999, 68-70; Lucassen & Lucassen 1999, 25; Green 1994):

The divergent comparison takes the immigrant group as constant and looks at similar groups in different settlement places. In this type of comparison, differences are found and explained at the level of the host environment (as the groups do not differ). The second type of comparison takes the host environment as constant and compares different immigrant groups in one place or city. This implies that differences will be found (and explained) at the level of immigrant groups themselves. (Vermeulen 2006, 15)

In the paper at hand, the immigrant group is defined by the country of birth (see definition appendix 1). In order to elaborate the relation between X and Y, education level is integrated in this comparison. This is done by choosing one immigrant group in which education level is low in relation to the native-born population, and another one, in which the level is high. In practice, one may choose, for instance, the best-educated and the worse-educated immigrant groups in the OECD countries and compare these groups' wages in one labour market and the wages of either one in two different labour markets. Alternatively one can choose two groups that have similar education levels but very different wages.

Green's (1994; 1999) comparison is, however, gender-blind and does not focus on wages nor on how they should be measured. These are shortcomings concerning this paper. In order to overcome these problems, Green's (1994; 1999) frame is combined with Reitz's (1998). According to Reitz (1998),

Gender and race interact in the labour market, requiring special analytical treatment. Because men are the dominant group in the workforce [in terms of wage], immigrant men are compared to dominant-group men. Immigrant women are compared both to dominant group women and dominant group men. A double comparison for immigrant women is important for two reasons. First, a comparison of immigrant women with dominant-group women ignores gender as a source of common disadvantage. All groups of women share workforce positions that tend to be marginal compared to those of men, and comparing minority-group women only with dominant-group women ignores that ... Second, the degree of disadvantage based on gender itself varies from one context to another. The position of immigrant women cannot be described without reference to the degree of gender disadvantage in a particular setting. (Reitz 1998, 47)

Reitz's analysis has crucial benefits when we answer the what-question: not only is it gender-specific but it also focuses on wages and emphasises that relations between different groups' wages

are more crucial than absolute wages. Reitz measures wages of the foreign- and the native born, women and men in relation to each other: wages of native-born men are represented by the index figure 100 (or, one hundred percent) and other groups' wage is compared to that. Thus, native-born women in the same labour market could be, for instance, 80 and foreign-born women 60 percent.

In this paper, comparability between different labour markets is achieved by first counting such indexes for a number of labour markets (market A = 100, market B = 95, market C = 93, and so on) and after these are counted, counting the "Reitz index" within each labour market. As a result, we have an internationally comparative comparison of wages (Y).

Thus all that is left is to find out a way to compare education levels (X) internationally. International comparability between educational degrees is achieved by using the UNESCO's International Standard Classification of Educational Degrees (ISCED: appendix 1).

UNESCO developed the International Standard Classification of Education (ISCED) to facilitate comparisons of education statistics and indicators across countries on the basis of uniform and internationally agreed definitions. In 2011, a revision to ISCED was formally adopted by UNESCO Member States. The product of extensive international and regional consultations among education and statistical experts, ISCED 2011 takes into account significant changes in education systems worldwide since the last ISCED revision in 1997. (UNESCO Institute for Statistics 2012)

Thus, now we have an internationally comparative framework in which it is possible 1) to compare correlations between education level (X) and wage (Y) between different labour market groups as well as between different countries, and 2) to explain to which extent the variation is caused by the chosen third variables. The elaboration works only on the condition that the focus group is exact to the extent that:

- 1) the value of X equals foreign-born groups, not "immigrants" or ethnic groups, or the second generation and
- 2) the groups are selected so that they represent certain education levels.

The findings can be explained also by choosing the set of third variables that the notion of country-specific human capital suggests; the problem with those is vagueness of the definitions and the measurement problems that follow.

## 5. Data

On the basis of the above, the data needs are known: the list of variables should include wage, education level, country of residence, (or country where the person works), country of birth and gender.

The minimum number of contexts and groups that allows doing both divergent and convergent comparisons is just two. Because we focus on the impact of education and compare its impact both on the native-born and the foreign-born, we need to compare several groups in both contexts. Table two below describes the data needs. In the table, Y equals wage. All that is needed is to fill in the values of Y, run the analysis described in this paper and interpret them accordingly.

Context (welfare state regime)	Liberal	Social Democratic
<b>Group</b>		
Native-born, high ISCED		
<i>Women</i>	y	y
<i>Men</i>	y	y
Native-born, low ISCED		
<i>Women</i>	y	y
<i>Men</i>	y	y
Foreign-born, high ISCED		
<i>Women</i>	y	y
<i>Men</i>	y	y
Foreign-born, low ISCED		
<i>Women</i>	y	y
<i>Men</i>	y	y

Table 2. Data needs.

Thus, empirical results appear when one fills in the values of Y (dependent variables) and runs the analysis described in this paper. It is decisive that 1) the receiving countries represent different welfare state regimes (classification: Esping-Andersen 1990; discussion about the classification: Weishaupt 2011) so that the impact of the context is revealed.<sup>x</sup> It is also important that 2) the groups represent different ISCED education levels, so that the context-specific impact of education is revealed. The ISCED levels should be the same in the cases of all the groups. Further on, 3) the data should be gender-specific so that the impact of gender would be revealed.

It is a matter of choice how many receiving countries and immigrant groups are included in the comparison. In a basic divergent/convergent comparison, it is enough to compare two groups in the same context (convergent) and either of those two groups also in another context (divergent). The groups and contexts could be, for example, Americans and Malinese in the Netherlands and the Malinese in the Netherlands and Spain).<sup>xi</sup>

In practice, the best data source would be population register, in which all this information is gathered per each individual, because a researcher can combine these variables and variable values easily. Population register data is, however, not available in most OECD countries or even in most EU member states. The OECD gathers immigration data, sent by its member countries, to Dioc and Sopemi statistics, but the gathering methods vary from one country to another. The methods can be divided in three: population register data, census and survey data. All can be seen as valid and reliable data sources but in both senses, register data is in a class of its own, given that the measurement process is carried out properly.

The data should also be internationally comparative, i.e. collected by using similar standards in different countries.

Many free-of charge datasets can be used for this type of analysis. Correct variables can be researched for example from the OECD's iLibrary ([www.oecd.org](http://www.oecd.org)), from the European Social survey ([www.europeansocialsurvey.org](http://www.europeansocialsurvey.org)) or from Eurostat's statistics (European Union Labour Force Survey, <http://epp.eurostat.ec.europa.eu/portal/page/portal/microdata/lfs>).<sup>xii</sup> Anyone with an internet connection has access to these data. Obtaining full access to the OECD's iLibrary statistics, however, in practise requires that one can access through some institution that subscribes to the data: for example, university students may be able to access as students, if their university holds a subscription.

## 6. Summary and relevance of this study

### *Scientific relevance*

This paper has presented an application, or a "translation" of a general scientific method, of how to separate causations from correlations, to the language of migration/integration studies. This application is a combination of two previous applications that seek to explain immigrant integration (Green 1994; 1999) and immigrants' wage formation (Reitz 1998). In its purest form, the research design is presented in terms of hard science, statistics, mathematics etc. This gap between hard science and social science has been sought to be bridged ever since the times of Weber, who pioneered the study of social structure on individual action. At that time, another classic sociologist, Durkheim, stressed that the general scientific method should be applied in social science, in the extent to which this is possible, considering some crucial differences between the object of research in hard science and social science.

Thus the comparative design developed in this paper actually goes far beyond Reitz (1998) and Green 1994; 1999) and all the way back to the classics of sociology. Examples of a "pure" divergent comparison are so-called FTSC studies that were done at the department of biochemistry in Oxford University: examples of these include Aussel, Barre, Aroyo et al. (2002) and Yates, Aroyo, Sherratt et al. (2003).<sup>xiii</sup> An immigration-specific application of this generally used and clear research design was developed by Green (1994). This paper has used comparative research designs to elaborate the relation between formal education on wage such that 1) the analysis is gender-specific and 2) both education and wage levels are comparative between different labour markets.

According to previous research and statistical evidence, the most crucial third variables are

- 1) immigrant group (represented in this paper by country of birth),
- 2) gender, and
- 3) labour market context (because the impact of these two is different in different labour markets)

In order to show the impacts, the relation between formal education and wage is elaborated with these variables. The approximate impact of each third variable can be shown by standardising the others. The result shows the actual impact of formal education on wage in different labour markets.

This paper does not analyse data but, according to previous research, these third variables steer labour market careers of women and foreign-born people away from jobs that would match their education and other human capital. This has some policy implications.

### *Political relevance: obstacles to income assimilation*

Concern over immigrant integration is one of the most pressing issues on the political agenda in many European countries. Previous research, summarised and discussed in this paper, shows that maximising the values of  $Y$ , which is the aim of skill-selective immigration policies, has little to do with values of  $Y$ . Certain third variables steer labour-market careers of women and foreign-born people away from jobs that would match their education and other human capital. This has some policy implications.

Affecting the supply-side, the educational credentials of women and immigrants is, according to previous evidence, not the main issue that integration policies should do, if they sought to alleviate the marginalisation. The problems lay on the demand-side: obstacles to integration can be found among the third variables, from the demand-side. In the words of the OECD (2007, 96),

[t]he purpose of employment-oriented migration policies is to define the criteria for recruiting immigrants so as to meet labour market requirements. It is necessary, therefore, not only to attract and in some cases retain foreigners but also to make better use of the human capital they represent.

Currently many OECD countries are battling against the aging of the population by increasing the productivity of work and by “importing” demand-meeting labour from abroad. The problem is, however, that third variables steer the supply away from jobs that would match their competences.

There may be several reasons why migration policy-making is not based on facts shown by empirical research. One of the most probable reasons is that research information would not reach policy-makers. To tackle this problem, the European Commission seeks to help develop the dialogue between research and policy. The tool is the IMISCOE network, stemming from the Sixth Framework Programme of the European Union. It is a research network comprised of twenty-three European research institutes that coordinates research activities concerning independent variables that affect international migration both in Europe as well as in the rest of the world.

Traditionally, research information about international migration has not reached policy-makers very efficiently. By networking research organisations, the Imiscoe seeks to coordinate research activities in the field of international migration, gather together the results and mediate research information to policy-makers. (Kraal, Roosblad & Wrench 2009, preface). Within IMISCOE, this connection is often called research-policy dialogue (Scholten 2011).

Research-policy dialogue is the object of research in one of the IMISCOE's research clusters. The cluster includes several research projects and one of these projects (Diamont) focuses specifically on developing the research-policy dialogue. The project has been running for some years but is still in a developing phase. According to a description on the webpage of the IMISCOE network's 9<sup>th</sup> annual conference ([www.imiscoeconferences.org](http://www.imiscoeconferences.org)), when this paper is being written (June 2011), the empirical part of the Diamont is running, but a wider theoretical framework for the research-policy dialogue is still missing. Concerning this paper, the need for future research is great because this paper only provided the skeleton of a research design. Empirical research on this basis should be carried out in order to flesh out the bones. If the desired effect would be to make policy on the basis of empirical evidence, the body must be connected to the head. Researchers in the Diamont project can perform the surgery, which is needed, if the head wants to connect with reality.

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<sup>i</sup> This is a preparatory paper for an actual article to be developed later. This is a presentation to be held at the ninth Imiscoe annual conference on 29 August 2012 in Amsterdam and at the Nordic Migration Research Conference in

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Turku/Åbo, 14 August 2012. I would like to thank the following persons for commenting on the paper including the technical details and the research design developed between 2010 and 2012: Han Entzinger, Mira Aroyo, Timo Partanen, Floris Vermeulen, Vesa Peltonen. Further comments are welcome since I seek to develop the paper.

<sup>ii</sup> This paper falls into the category of migration studies, a cross-disciplinary area of study and thus previous studies about the research topic represent different disciplines, such as economics and other social sciences (e.g. Kolb & Egbert 2008), urban studies, demography, urban studies, development studies, etc. While the array of different disciplines is great, the common denominator is the research topic: which independent variables affect immigrants' and women's income. Different disciplines differ only in that they have different points of view to the same topic and some of them emphasise the topic more than others. The topic is very crucial in studies about immigrant integration, for example, and studied much in econometrics (Pekkala-Kerr & Kerr 2011), but it is only a minor detail in transnationalism studies, such as in Mügge (2011).

<sup>iii</sup> more information about this is available from the homepage of the University of Chicago's dept. of Economics' Chicago pricy theory project's Becker Center at <http://research.chicagobooth.edu/pricetheory/index.aspx> (accessed 2 April 2012).

<sup>iv</sup> Explaining international migration is beyond the focus of this paper. Those interested in the topic may be interested, for example, in recent studies about diaspora and transnationalism (e.g. Mügge 2011; Frishman, Wertheim, de Haan et al. 2011).

<sup>v</sup> Potential platforms for further elaboration of this debated concept are provided by economic sociology (Granovetter & Swedberg 2011) and some branches of economic migration research (Kolb & Egbert 2008).

<sup>vi</sup> In this case, the contradiction between theory-based immigration policy and empirical reality was especially strong. The malfunctioning of European integration policies started to appear slightly after Piore's influential study, in the late 1970s. Piore's integration theory was put to a severe test by the so-called guest worker policies. The history of guest worker policies can be summarised as follows: First, between 1950 and 1974 some European countries faced severe labour shortages; second the shortages were sought to be filled by increasing the supply of labour and this was done by recruiting millions of workers from abroad (mainly from poorer European countries, Northern Africa and Turkey); third, the idea was that when demand for labour in the market would lessen, "guest workers" would move back to their countries of origin and balance between demand and supply would remain. However, when two consecutive oil crises in 1971 and 1973-4 decreased labour demand heavily, the expected kind of emigration did not occur which led to an oversupply of immigrant labour (Massey et al. 2005, 108-122; Castles & Miller 2003, 68-73, 123-128). Assumed temporary "guests" appeared to be permanently settled "aliens" (Sassen 1999, 99-103) and unlike Piore (2008 [1979]) assumed, immigrants were "birds of passage no more" (Knocke 2008).

<sup>vii</sup> This shows an impact of social networks on immigrants' labour market performance. Portes & Bach (1980) tested the dual-labour market theory, according to which the labour market would comprise of two distinct segments: 1) the capital-intensive primary sector, characterised by skilled and stable jobs, good career opportunities and specialised education and training paid for by the employer and 2) the labour-intensive secondary sector, characterised by the opposite (Piore 2008 [1979], 35-43; Massey et al. 2005 [1998], 31). In the dual labour market theory, immigrants were placed in the secondary segment (Piore 2008 [1979], 35-43). Portes & Bach (1980) tested the theory empirically in the Cuban community of Miami and found that immigrants do not fit in either of the segments. Instead, they form a third one that includes characteristics of both. This third segment is comprised of ethnic enclaves that are based on co-ethnic social networks: just like in the secondary segment, the jobs would be low-status, poorly paid and working conditions would be unpleasant, but the difference to the secondary segment would be that because of the networks, career opportunities would be good (Portes & Bach 1980; Massey et al. 2005, 31).

<sup>viii</sup> Labour-market marginalisation of young immigrants has been considered one of the greatest social problems in the European labour markets ever since the second generation started entering working age (Crul & Heering 2008, 19). The second generation is not included in the foreign-born population. The OECD's statistical standards that concern the second generation are discussed in OECD 2008, 64-75.

<sup>ix</sup> This can be seen for instance from the OECD's Dioc database by comparing wages by ISCED education level, between the foreign-born and the native-born (Dioc statistics are available at [www.oecd.org](http://www.oecd.org), iLibrary, limited access; the statistics are published also in OECD 2007).

<sup>x</sup> preferably the extremes of Esping-Andersen's (1990) classification: heavy and weak public intervention in the labour market. This equals 1) a liberal context in which the intervention is weak (a relatively unregulated labour market, weak taxation, accompanied by a weak labour union movement) and 2) a Social Democratic / Scandinavian context in which the intervention is heavy (a regulated, rigid labour market, heavy taxation, strong labour union movement).

<sup>xi</sup> According to the OECD's DIOC report (OECD 2008, 79), these two countries of origin represent the extreme ends of ISCED levels in the OECD countries. About 50 percent of US-born people had a tertiary-degree education, while the number was 12 percent for the Malinese.

<sup>xii</sup> These three internet pages were accessed on 23 March 2012.

<sup>xiii</sup> I would like to thank Mira Aroyo for the valuable comment concerning the research design used in the “FTSK studies.” Благодарим! In this paper, the immigrant group (the case) equals FTSK protein and labour market context equals a species. The “FTSK studies” (Aussel, Barre, Aroyo et al. 2002; Yates, Aroyo & Sherratt 2003) sought to show species specificity in the activation of the protein. In order to do that, this divergent comparison (between species) was done.

## Appendix 1. Definitions.

### Contents

1. Introduction
2. Definitions

## 1. Introduction

This appendix provides definitions of some key concepts used in the paper and in the other appendices.

For the most part, the concepts are derived directly from the OECD's glossary of statistical terms (OECD 2012). Migration-related concepts are defined in the Dioc database; they are the same statistical definitions but they are fewer in number (see e.g. OECD 2008). Several definitions have been adjusted to suit the primary requirement of this paper, which is empirical preciseness.

The quantitative nature of the paper requires statistically precise definitions: each concept must include a precise set of variables which values can be measured. These are needed in order to control for the possible impact of third variables on wage.

The OECD's glossary of statistical terms (ibid) is a good place to start looking for definitions that are used in this paper, but it is not sufficient. Some concepts require some reflecting. The reflections are in this appendix. The most problematic concepts are discussed in separate appendices: They include definition-related and/or measurement issues.

## 2. Definitions

**Wage.** "The earnings analysis focuses on relative earnings within each country and thus ignores currency differences among countries" (Reitz 1998, 42). In this paper, *the definition of wage is not as crucial as data comparability* between labour market groups in different national labour markets. Thus it is more crucial that the following criteria of data comparability are met: firstly, whichever the definition is, it is the same for all the compared groups, secondly, that the focus groups are the same in the compared contexts and thirdly, that the data collection methods produce data that is comparable between contexts; ideally the methodology is the same (such as population register), but in the OECD, migration data is based on different sources in different countries (population register data, census data, survey, etc; e.g. OECD 2008, tables). This causes some inevitable reliability and validity issues.

The focus population (the same in all countries) includes only the employed people over 15 years of age. It should be noted that the unemployed and people who do not participate in the labour force, are not included in the focus population. This excludes a relatively large percentage of the foreign-born and women, whose unemployment rates are higher and labour force participation rates lower than those of the native-born and males, almost in all OECD countries (OECD 2008). Thus, the results of an analysis that is based on this data is not generalisable to the entire population.

Wage is a synonym for of several other concepts that are used in research; such as earnings (Reitz 1998) and income (Borjas 1989). According to OECD (2005), there is not a specific, internationally agreed definition of wages. Wage is defined as follows:

Wage rates measure the basic remuneration per time unit or unit of output. Although the Resolutions of the 12th International Conference of Labour Statisticians (ICLS, 1973) does not contain a specific definition of 'wages' as such, it recommends the compilation of wage rate statistics which should include basic wages, cost-of living allowances and other guaranteed and regularly paid allowances, but exclude overtime payments, bonuses and gratuities, family allowances and other social security payments made by employers. Ex gratia payments in kind, supplementary to normal wage rates, are also excluded. Wage rate data should relate to an appropriate time period – hour, day, week or month. Wage rates may be viewed from the perspective of a 'price' of labour services.

International comparison of wages can be done also with a certain standard (ISCO wage level classification of the International Labour Organisation)<sup>1</sup> but this is not needed for the purposes of the analysis sketched in this paper.

**Education** refers to education level according to the UNESCO's International Standard Classification of Education. The classification converts national educational degrees to an internationally comparative form.

The [ISCED] mappings provide clear guideposts on how to report national education data for international purposes. ... ISCED provides the framework to help statisticians classify diverse systems in such a way that they can be compared across countries. (UNESCO 2012).

Degrees are put on a scale of six levels. Information about national education systems is gathered with surveys:

The survey includes a range of questions for each education programme on issues such as entry requirements, entry age, duration and diplomas obtained as well as their corresponding ISCED level for pre-primary to tertiary education. In addition, countries are consulted individually, when necessary, to resolve potential classification problems which might compromise the comparability of their education data (ibid.)

In the OECD's DIOC database, which is the database used in this paper, of this paper, the focus population and variables are as follows: "population aged 15 and over, by country of birth and gender. ... [T]here are three categories of educational attainment: primary or lower (ISCED 0/1/2), secondary (ISECD 3/4) and tertiary (ISCED 5/6)." (OECD 2008, 77).

**Gender** refers to biological sex marked in the DIOC database.

**"Immigrant" and "native"** refer to country of birth that appears in the DIOC database. "Immigrants" are foreign-born people, as opposed to "natives" who are native-born. The second generation is thus included in "natives" (children who are born in the country of residence to foreign-born parent(s)).

**Human capital** has several different definitions (Acemoglu & Autor 2009). See appendix 2 for key definitions of this umbrella concept. They all suffer from inexact definitions. The exact variables depend on the definition. In the 1990s, language skill was added to a human capital variable (Dustmann 1999). This led to problems of measurement, as the impact of country-specific human capital is difficult to separate from the impact of discrimination.

**Country-specific human capital** refers to that the labour market value of human capital would depend on if human capital was acquired in the current country of residence, or abroad. Social psychological literature shows that the country-specificity is caused mainly by recruitment discrimination (appendices two and four).

**Discrimination:** appendix four. The classical social psychological definition is “denying individuals or groups of people equality of treatment which they may wish” (Allport 1979 [1954], 51). This definition is challenged by new forms of indirect discrimination (Brown 1995); see appendix two. The contemporary mixture of old and new discrimination brings about problems concerning 1) measurement (both validity as well as reliability; Makkonen 2007) and 2) international comparability (Wrench 2011).

**Social networks (a form of social capital):** the definition in this paper is: the source of benefits mediated by nonfamily networks, exemplified by personal networks that facilitate access to jobs (Portes 2000, 2; Granovetter 1995 [1974]).

The concepts of social networks and social capital are often mixed up, even though they do not refer to the same variables. Social capital is an umbrella concept for a wide range of theories in which all social networks are crucial elements (Portes 1998; 2000; Burt 2000). However, only a few applications are constituted from exact variables, which are measurable empirically. One of these theories is the labour market specific micro-level theory, spearheaded by Granovetter (1995 [1974]). The definition of the concept is discussed brilliantly by Portes (2000, 1): according to him, the increased popularity of the concept led to decrease in its heuristic value, leading to that Granovetter's application stood out from the crowd.

“The concept of social capital is arguably one of the most successful ‘exports’ from sociology to other social sciences and to public discourse during [the 1980s and 1990s] ... [The] remarkable range of applications has been accompanied by a great deal of confusion concerning the actual meaning of social capital and growing controversy about its alleged effects. Much of the controversy surrounding social capital has to do with its application to different types of problems and its use in theories involving different units of analysis. The original theoretical development of the concept by the French sociologist Pierre Bourdieu [1985]<sup>ii</sup> and the American sociologist James Coleman [1988]<sup>iii</sup> centered on individuals or small groups as the units of analysis ... [B]oth scholars focused on the benefits accruing to individuals or families by virtue of their ties with others”.

On top of this popular usage that caused confusion about the meaning of the word, scientists have “invented” the concept six times during the twentieth century (Putnam (2000, 19-20).

Portes (2000, 2) continues that the social capital literature that followed Coleman (1988) and Bourdieu (1979), followed, for the most part, [similar guidelines as in their theories.

Social capital came to be defined as (1) a source of social control, (2) a source of family-mediated benefits and (3) a source of benefits mediated by nonfamily networks. (Portes 2000, 2.)

The latter usage of the concept is the empirically measurable one; the measurement issue is discussed in appendix 4. "The latter usage, exemplified by personal networks that facilitate access to jobs, market tips, or loans, comes closest to Bourdieu's original definition of the concept" (Portes 2000, 2). A synthesis of previous approaches was recently introduced by Lancee (2012).

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<sup>i</sup> According to the OECD (2007, Annex II.A2), the ISCO classification has the following shortcomings: “[t]he attempt to achieve uniformity through the ISCO and ISCED classification systems can mask certain particularities associated with specific countries or periods of time: The content of diplomas of an apparently similar level in two different countries may differ, and within any given country, the value of a diploma may vary over time. Reporting bias can also affect the findings, and perhaps even more so in respect to the qualifications for a job, which are more readily subject to “over-estimation”. The matching of categories of educational levels and categories of qualifications (especially when they are highly aggregated), as noted in ILO recommendations (OECD, 2002), is arbitrary. The exact prerequisites for any given job are not examined (and may vary from one country to another). The existence of widely divergent standards for measuring the correspondence between education and job qualifications attests to the fact that the correspondence cannot be definitively pinned down. Lastly, in many cases the supply of skills as measured by education is not exhaustive: It corresponds to educational attainment at the time individuals complete their schooling, and excludes skills acquired outside the classroom (e.g. ongoing training, etc.)”

<sup>ii</sup> The reference is added by myself.

<sup>iii</sup> The reference is added by myself.

## Appendix 2. The X. Definitions of human capital: does it equal education?

### Contents

1. Fundamental human capital literature
  - 1.1. Becker
  - 1.2. Becker in the context of later definitions
2. Correlation between education and human capital (definition of the X)

## Definitions of human capital: does it equal education?

[Y]ou cannot separate a person from his or her knowledge, skills, health or values the way it is possible to move financial or physical assets while the owner stays put (Becker 1993 [1964], 17)

[T]he effect of education itself could be isolated only if the amount of other human capital ... were held constant (Becker 1993 [1964], 181)

This appendix looks more closely at different definitions of human capital. There exist much more definitions of human capital than the ones mentioned below. These ones are selected on basis of how well they answer two questions: 1) which studies constitute the fundamental literature about human capital (section one) and 2) what do these studies say about the relationship between education and human capital (section 2). We find that human capital refers to an embodied resource that on the individual level of analysis increases productivity of work and income and affects labour market stratification on the macro level; that the role of education as a human capital variable is stressed differently in different definitions; and finally, that controlling for its exact impact is impossible since it is not known which exact independent variables constitute "human capital".

### 1. Fundamental human capital literature

#### 1.1. Becker

Becker introduced the concept of human capital to the economic theory in his book "human capital" (Becker 1993 [1964]). The basic assumption of Becker (ibid.) is rather similar to that of the neoclassical synthesis (originated by Hicks 2013 [1963] and popularised by Samuelson 1948). In the (neo)classical conception,

labo[u]r is a commodity ... employers are the buyers and employees the sellers of labour. Wages ... are analogized to price ... Supply and demand operate .... to establish an equilibrium: the price of labo[u]r fluctuates in the short run until that single price is arrived at which clears the market. For homogenous work, wage dispersion and unemployment are not possible; firms that pay more than the equilibrium price for labo[u]r will therefore attract workers from firms paying less. This excess of supply over demand will drive down the price. Firms losing employees will similarly be constrained to raise wages. Workers unemployed in the short run may bid for work, driving down the price to the point where they, and those currently working, will all be employed at the new, lower equilibrium wage. This ... package

ties together wages, unemployment and labo[u]r mobility (Granovetter 1995 [1974], 25.)

The theory assumes that individuals would act rationally and seek to maximise marginal profit, i.e. surplus value of /rate of return to their action and investments (Lin 1999, 28-29; Becker 1993 [1964], 15-28).

The difference between the neoclassical theory and human capital theory is that human capital is immaterial. The idea of immaterial capital is not only Becker's invention, as discussed by Lin (1999). Lin (ibid.) has analysed the similarities and differences between classical economic theory and the human capital theory and according to him, the human capital theory would be one of the neo-capital theories. The difference between classical theories of capital and neo-capital theories is that classical theories assume capital refers to financial or physical capital, whereas neo-capital theories build on the idea of immaterial capital.

According to Becker (1993 [1964]), human capital is an embodied resource that is inseparable from the worker (Becker 1993 [1964]). It would have three main components: education and training (ibid. 17),<sup>i</sup> on-the job training (ibid. 20)<sup>ii</sup> and family background<sup>iii</sup> (ibid. 21).<sup>iv</sup>

Becker (1993 [1964]) stresses strongly the great weight of formal education as a human capital variable: education is the most important component of human capital. In a post-industrial production, an individual's education level determines productivity of work and productivity, again, determines salary. Becker describes the assumed causal chain:

“education and training are the most important investments in human capital ... high school and college education greatly raise a person's income, even after netting out direct and indirect costs of schooling, and after adjusting for the better family backgrounds and greater abilities of more educated people.” (Becker 1993 [1964], 17).

Other, less important, components of human capital are, according to Becker (ibid.), other knowledge, such as information about employment opportunities,<sup>v</sup> and family background.<sup>vi</sup>

Becker argued that individuals' skills/human capital cause individuals' labour market performance as well as stratification of the entire labour market. Better educated groups would be higher in the “new class structure of the post-industrial society” (Bell (1999 [1973], 165-298).

Thus, just like in the neoclassical theory, individuals would seek to maximise rate of return to their capital and invest in order to increase the amount of capital. Only the form of investment would differ. Rate of return would sought to be maximised by investing to: education, training, health, job search and migration. In simplified terms, an individual would invest in technical skills and knowledge (Lin 1999, 30). In order to increase income, and go where the expected rate of return would be the highest (i.e. change workplace and invest in migration).

Since Becker, the human capital theory has become an umbrella concept for various different kinds of theories. They share the main characteristics with Becker's theory but the dominance of formal education is different in different theories. Below I will first position Becker's theory in the contemporary context of human capital theories and then discuss how the emergence of these new applications has affected the dominance of formal education variable.

## 1.2. Later definitions

Acemoglu & Autor (2009, 5) separate between

five definitions of human capital: 1) the Becker view (Becker 1993 [1964]), 2) the Gardener view,<sup>vii</sup> 3) the Schultz/Nelson-Phelps view,<sup>viii</sup> 4) the Bowles-Gintis view,<sup>ix</sup> and 5) the Spence view.<sup>x</sup>

[T]he first three views are quite similar, in that “human capital” will be valued in the market because it increases firms’ profits. This is straightforward in the Becker and Schultz views, but also similar in the Gardener view. In fact, in many applications, labor economists’ view of human capital would be a mixture of these three approaches. Even the Bowles-Gintis view has very similar implications. ... The Spence view is different from the others, however, in that observable measures of human capital may be rewarded because they are signals about some other characteristics of workers. (ibid. 4-5).<sup>xi</sup>

Acemoglu & Autor (ibid. 3) conclude that

[O]ne of the most important ideas in labor economics is to think of the set of marketable skills of workers as a form of capital in which workers make a variety of investments ... Loosely speaking, human capital corresponds to any stock of knowledge or characteristics the worker has (either innate or acquired) that contributes to his or her “productivity”.

This definition is broad (ibid. 3). Its definition has both advantages as well as disadvantages. The advantage would be that the broad definition would enable understanding that other investments than education are crucial investments in human capital. The disadvantage would be that such a broad definition may lead to explaining all labour market outcomes as if they were caused by human capital (ibid. 3): all wage differences would be related to skills (Acemoglu & Autor 2009, 3-4). This approach overly emphasizes the role of human capital: for example, “employers may pay a lower wage to a worker because of the worker’s gender or race due to their prejudices” (ibid. 4). Acemoglu & Autor (ibid. 4) conclude that it is important to take draw-backs like this seriously instead of over-estimating the causal role of human capital (ibid. 3-4).

## 2. Correlation between education and human capital

The role of education as a part of human capital has changed from Becker’s (1993 [1964]) over-estimation towards the above-mentioned less education-centered theories (Acemoglu & Autor 2009, 3).

Becker’s definition has several empirical shortcomings. These are mentioned in his book but afterwards, they have not been stressed much. Firstly, Becker notes that the amount invested is difficult to count because it extends over a long period of time and the exact time period is unknown (Becker 1993 [1964], 59). Secondly, the independent variables are unknown so the impact of education is difficult to determine. In Becker’s (1993 [1964], 181) words: “the effect of education itself could be isolated only if the amount of other human capital as well as ability were held constant” (Becker 1993 [1964], 181).

This is a very crucial issue concerning this entire paper, because other human capital can hardly be kept constant. The explanatory power of contemporary human capital theories is based on the concept of country-specific human capital that includes inexact variables (appendix four): it is not

known which exact variables should be kept constant. Therefore, controlling for the effect of “other human capital” in order to show the effect of education depends which variables represented “human capital”. One can basically decide the results first and then include variables that confirm the result.

As a conclusion it may be argued that while Becker (1993 [1964]) was very strict in emphasising the causation between education and human capital, some later applications of the human capital theory stress that third variables do affect the correlation. However, all these definitions suffer from a shared problem: apart from formal education level, independent variables are not known, that is, other components of human capital. Therefore, controlling for “human capital” tells about impact of the variables that were chosen to represent “human capital.” Education level is the only human capital variable that can be measured objectively, with the UNESCO's International Standard Classification of Education.<sup>xii</sup>

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<sup>i</sup> “The earnings of more educated people are almost always well beyond average, although the gains are generally larger in less developed countries” (Becker 1993 [1964], 17) .

<sup>ii</sup> [L]earning and training also occur outside of schools, especially on jobs. ... on-the job training is an important source of the very large increase in earnings as workers gain greater experience at work.” (Becker 1993 [1964], 20).

<sup>iii</sup> “No discussion of human capital can omit the influence of families on the knowledge, skills, values and habits of their children. ... [E]ven small differences among young children grow over time with age and schooling ... The term ‘underclass’ describes families in which low education, welfare dependence, early pregnancy, and marital instability pass on from parents to children.” (Becker 1993 [1964], 21).

<sup>iv</sup> Other theories of immaterial capital would include for example social capital (Lin 1999; Granovetter 1985; Burt 1992; 2000; Coleman 1998; Putnam 1993) and cultural capital (Moore 2008; Bourdieu 1979; 1985). That much for the theoretical context: we might theorise endlessly for example the similarity between human capital and Bourdieu’s

educational capital, but the subject of this appendix is strictly human capital, its definitions and the role of formal education as a human capital variable according to those different definitions.

<sup>v</sup> "...[I]nvestment in information about job opportunities. A better job might be found by spending money on employment agencies and situation-wanted ads, by using one's time to examine want ads, by talking to friends and visiting firms, or in Stigler's language, 'search'" (ibid. 53)

<sup>vi</sup> One way to invest in human capital is to improve emotional and physical health. ... [Emotional health increasingly is considered an important determinant of earnings in all parts of the world" (ibid. 55).

<sup>vii</sup> [A]ccording to this view, we should not think of human capital as unidimensional, since there are many ... dimensions or types of skills. A simple version of this approach would emphasize mental vs. physical abilities as different skills. Let us dub this the Gardener view after the work by the social psychologist Howard Gardener, who contributed to the development of multiple-intelligences theory, in particular emphasizing how many geniuses/famous personalities were very "unskilled" in some other dimensions." (Acemoglu & Autor 2009, 5.)

<sup>viii</sup> According to this approach, "human capital is viewed mostly as the capacity to adapt ... [H]uman capital is especially useful in dealing with 'disequilibrium' situations, or more generally, with situations in which there is a changing environment, and workers have to adapt to this" (Acemoglu & Autor 2009, 5.)

<sup>ix</sup> "'human capital' is the capacity to work in organizations, obey orders, in short, adapt to life in a hierarchical/capitalist society. According to this view, the main role of schools is to instill in individuals the 'correct' ideology and approach towards life." (Acemoglu & Autor 2009, 5.)

<sup>x</sup> According to this view, "observable measures of human capital are more a signal of ability than characteristics independently useful in the production process" (Acemoglu & Autor 2009, 5; see appendix for about how these signals are used in the cognitive classification process and in recruitment discrimination.

<sup>xi</sup> Classification of individuals on basis of easily observable characteristics is a crucial feature of the action of gatekeepers of the labour market (Lee & Wrench & 1983; Paananen 1999; Wrench & Modood 2000; Nilsson 2006; Nilsson & Wrench 2009). It is based on stereotypes (Brown 1995; Allport 1979 [1954]) which may be rational or irrational (ibid.). Action that is based on such grounds is often discriminative and may result in that individuals with equal human capital have unequal opportunities to use it. In other words, such thinking is often a source of recruitment discrimination.

<sup>xiii</sup> <http://www.uis.unesco.org/Education/Pages/international-standard-classification-of-education.aspx> (accessed 24 June, 2012).

### Appendix 3. Discrimination as a third variable

#### Contents

1. Definition in social psychology: the underpinning cognitive process and direct discrimination in action
2. Measurement of discrimination

Longitudinal surveys showed that ethnic minority school leavers across Britain are having less success than whites even when other factors, such as educational attainment, are held constant ... Research on the processes and structures of ethnic and racial discrimination provides part of the explanation as to how this ethnic penalty is paid. (Wrench & Modood 2000, 1)

The exact impact of discrimination on individuals' wages is difficult to measure. The reason is that since the 1960s-1970s, somewhat measurable *direct* discrimination has been replaced by more subtle forms of *indirect* discrimination (Brown 1995, 207-234). Neither prejudice, discrimination, nor their impact has been shown to decline but they are more difficult to measure (ibid. 208-217)

According to previous research, discrimination is one of the most important reasons that affect labour market status of foreign-born people, ethnic minorities and women. This issue is shown by different kinds of statistical analyses from different countries (e.g. Great Britain: ibid; Dustmann & Preston 2001; Sweden: Rydgren 2006; Germany: Constant, Kahanec & Zimmermann 2008).

Discrimination affects individuals' labour market success by creating inequality of opportunity (Allport 1979 [1954], 52; Kraal, Wrench, Roosblad et al 2009). Evaluating the exact impact of discrimination is, however, challenging, because measurement of discrimination and especially its modern indirect forms is difficult. Below are discussed the classic social psychological definition of discrimination, the definition of indirect discrimination and finally it is suggested that the measurement problems are related mainly to indirect discrimination.

#### **1. Definition in social psychology: the underpinning cognitive process and direct discrimination in action**

*The nature of prejudice in short and an example: discrimination of the handicapped*

According to the classical social psychological definition (Allport 1979 [1954]), *discrimination* may follow from *categorisation, prejudgement and prejudice*. *Categorisation and prejudgement* are considered normal features of the human mind that help us to make sense of the complex environment in which we live in (ibid; Brown 1995, 39-40). For example, one may categorise human groups by thinking that physically handicapped people would be more likely to be retard than healthy individuals. It may or may not be a statistical fact that the people who speak badly are usually retards but it is more important what the classifier believes (see below).

*Prejudice* refers to un-flexible categories that do not change when new objective evidence appears (such as when a physically handicapped person is not retard) and *discrimination* refers to action that is based on prejudice (the handicapped person is still treated like a retard, because of the physical

handicap) (the example is applied from Allport 1979 [1954], 19-23). Below I will explain this cognitive process in more length and then move on to the problematic of measuring discrimination.

### *The cognitive process in more length*

categorization is a cognitive process which does not just occur in bizarre circumstances or in certain pathological cases. It is ... an inescapable feature of human existence. ... It is so because the world is simply too complex a place for us to survive without some means of simplifying and ordering it first. (Brown 1995, 41)

Classification and prejudgement are synonyms to categorisation (Allport 1979 [1954], 19-23). According to Allport (1979 [1954], 19-23), categorisation has five features: 1) it is unavoidable; 2) it forms large classes or clusters for individuals' daily adjustments; 3) categorisation assimilates as much as it can to the clusters; 4) the category enables us to quickly identify a related object; 5) the category saturates all that it contains with the same flavour and 6) categories may be more or less rational (Allport 1979 [1954], 21-22).

To make a rational prejudgment of a group requires considerable information of the characteristics of the group; however, even if this information was available, categorisation of human groups is often based on hearsay (ibid.22). Individual characteristics of group members are ignored and replaced by stereotypes (Allport 1979 [1954], Brown 1995, 81-118). "Stereotype is an exaggerated belief associated with a category" (Allport 1979 [1954], 191), an "illusory correlation" (Brown 1995, 86). A person's belonging in some category is identified on basis of signs of primary reference: such as, because a person is a woman or a man, black or white, etc. (s)he is likely to share the characteristics typical to that group: for example, in the 1990s Finnish gatekeepers believed that people from a given country were "lazy" and from some other country less lazy (Paananen 1999).<sup>1</sup>

New observations and experiences must always be put in some existing category (Allport 1979 [1954], 29); ideally and normally the categories develop when new evidence occurs. Until now, we are discussing a normal cognitive process of categorisation.

However, categories are resistant to change (Allport 1979 [1954], 9). Existing categories do not always change when new evidence occurs, which leads to that categories conflict with objective evidence. When a category conflicts with objective evidence, it turns into prejudice. (ibid. 23-25).

Prejudiced may take many forms, from verbal rejection to discrimination, physical attack and genocide (ibid. 48-57). Discrimination takes place "only when we deny to individuals or groups of people equality of treatment they may wish" (Allport 1959 [1954], 51).

## **2. Measurement of discrimination**

It has been argued that in the modern society, direct discrimination would have become rarer and been replaced by indirect discrimination, eg. by more subtle forms of discrimination (Brown 1995, 217-233).<sup>ii</sup> According to this argument, the amount of discrimination would have remained constant and only its manifest forms would have changed:

which "Indirect discrimination means an apparently neutral provision, criteria, or practice would put persons from racial or ethnic minorities at a disadvantage in

comparison with the majority, for reasons which cannot be justified by a legitimate aim. As Simon points out, by its very nature, indirect discrimination calls upon statistical reasoning. Apparently neutral procedures can be shown to be not at all neutral in their effects on certain groups" (Wrench 2011, 1717; Simon 2005, 13).

Forms of indirect discrimination are harder to measure than forms of direct discrimination. Below I discuss how to make "the invisible visible" (Wrench 2011, 1717; Simon 2005, 13).

Much of the problematic in measuring discrimination are related to its subtle forms, which has been acknowledged by researchers and policy-makers. In 2006, the European Commission (Makkonen 2007) published results a research project about the measurement of discrimination. The project sought to find out how to build to a national knowledge base on equality and discrimination on the discrimination grounds mentioned in the EU's directives 2000/43/EC and 2000/78/EC: racial or ethnic origin, religion and belief, disability, age and sexual orientation, in wide range of areas. The result was that several different types of data sources and methods of analysis are needed in order to compile statistics about the impact of discrimination. One data set can be analysed by several different methods and different combinations give different results (ibid.).

The final report (Makkonen 2007) mentions different types of sources that all have different strengths and weaknesses concerning validity, reliability, scope and cost-effectiveness. but that complement each other: official statistics, complaints data, research and diversity monitoring (ibid. 28-32). Different types of data gave different results. The big picture was that data that measured subjective experiences of the victims, told that discrimination was very common, but that complaints data gave an impression that discrimination was far less common. The reason, shown basically in all studies about the subject, is that subjective experiences of discrimination are easily told in surveys, for example, but there is certain threshold to inform the authorities, because subjective experiences are difficult to prove objectively.

Also many other sources, such as Wrench (2011), argue that objective measurement of discrimination in employment requires the use of several types of data: indirect statistical data that describes the relative labour market status of different groups, accompanied by other types of data that measure discrimination: complaints data, victim surveys, surveys on the attitudes of "gatekeepers" (recruiters), participant observation, field experiments/situation testing.

Gatekeepers, i.e. the persons who make recruitment decisions (Lee & Wrench 1983; Paananen 1999, 11-12; Wrench & Modood 2000, 1) are considered to be the core of indirect discrimination in the labour market. Gatekeepers set very narrow competence requirements (Nilsson & Wrench 2009, 34; Nilsson 2006), such as exaggerated skill in the mainstream language (Paananen 1999) and may also be engaged in direct discrimination (Lee & Wrench 1983; Wrench & Modood 2000, 1).<sup>iii</sup> This is by definition discrimination: unequal treatment on basis of ethnicity/gender/etc, but it is often legal and very difficult to prove objectively. Gatekeepers typically prefer their own ethnicity (Wrench & Modood (2000, 1), i.e. their in-group (Allport 1979 [1954], 31-39; .

Indirect discrimination is difficult form to measure objectively (Nilsson & Wrench 2009, 33), because it is of the reasons mentioned above by Wrench (2011, 171; Simon 2005, 13). In the main text of this paper this issue relates to the problem of how to measure "country-specific human capital": of how difficult it is to tell where the line between discrimination and reasonable language skill requirements goes.

Yet another issue is to measure the exact impact of discrimination on individuals' wage. According to Rydgren's (2004) survey of Swedish research literature,

“key actors holding gatekeeper positions in the labour market discriminate against migrants in a two-fold way: by making decisions about recruitment, etc. based on stereotypical—and often prejudiced—beliefs about group-specific characteristics rather than on individual skills; and by choosing people they know or who have been recommended by someone they know for vacant positions (network recruitment).”

Also studies into the actions of gatekeepers usually consider that network-based recruitment would be discriminatory towards non-members, because they would not hear about the job opening (Wrench & Modood 2001).

In this paper at hand and in Kraal, Roosblad & Wrench (2009), both discrimination and networks are recognised as third variables that cause inequality of opportunity. However, unlike in those three studies, I make a distinction between network effects and discrimination. They do have similarities, because co-ethnic networks have been shown to prefer members of the same group (e.g. Portes & Sensenbrenner 1993; Kloosterman van der Leun & Rath 1999; Saxenian 1999). However, measuring the “discriminatory” impact would be empirically challenging, since co-ethnic networks also improve labour market statuses of the foreign-born and serve as an important integration route to the labour market (Portes & Bach 1985; Portes & Sensenbrenner 1993; Rusinovic 2006; van Nieuwenhuyze 2009).

The exact impact of discrimination can be measured for example by using regression analysis (Makkonen 2007, 21) or controls (Rydgren 2004). Results depend in part which variables are used. “Network discrimination” can be easily excluded from both types of analyses and for empirical reasons that might be a reasonable thing to do. Makkonen (2007, 21) describes the use of regression analysis:

Discrimination is just one of the processes that contribute to the often disadvantaged position of the equality groups, making it challenging to positively establish the portion to which the disadvantaged position of a group, as shown for instance by outcome statistics, is the result of discrimination. While it may safely be assumed that discriminated-against groups are worse off than they would be if they were not discriminated against, it is very difficult to tell the effect of the different factors from each other. Some researchers have used regression analyses in an attempt to control the other relevant variables, such as average level of education, in an effort to estimate the extent to which disparities in e.g. income or employment level result from discrimination. (European Commission 2007, 21)

Rydgren (2004) describes the use of controls:

Migrants—in particular non-European migrants—have considerably higher unemployment rates and lower wage incomes than native Swedes. Although reduced, a significant gap remains when controlling for human capital factors (such as education) and for so-called ‘country-specific’ human capital factors (such as years spent in Sweden). (Rydgren 2004, abstract)

However correct these evaluations of the impact are, they are only guiding. This is because there is no agreed definition of discrimination and because discrimination is difficult to measure objectively. Thus, all we know is that labour market discrimination is a common and crucial third variable, because it is based on the latent function (some very fundamentals of human cognition), but that the manifest functions (the exact amount and impact of discrimination on labour market outcomes) are difficult to measure.

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<sup>i</sup> Human groups are usually put in hierarchies on different grounds and on top of all hierarchies, there are the groups one believes (s)he belongs to (in-groups, "us"); they are preferred in relation to out-groups (them) (Allport 1979 [1954], 29-47).

<sup>ii</sup> Brown (1995, 217-233) speaks about new forms of prejudice, not discrimination, but prejudice underpins discrimination. The reason of this change in the manifest forms would be that modern norms prohibit discrimination: both social and legal norms.

<sup>iii</sup> In the original meaning of the concept (Wrench & Lee 1983; Wrench & Modood 2000) "gatekeeper" refers to a representative of a work organisation who make recruitment decisions. Paananen (1999, 11-12) uses a wider definition and considers that also other people who can influence recruitment of immigrants, would be gatekeepers. This is a logical addition considering that Paananen studied a labour market where state intervention in the labour market is strong (Finland) and employment authorities influence greatly immigrants' job search. Paananen (ibid. 49) refers to a study (Bovenkerk et al 1994) that showed that a person with a "foreign-sounding name and appearance was discriminated against in all phases of the recruitment process. In the study, pairs of a "native" and an "immigrant", who had all the same professional competencies, applied for hundreds of same jobs.

## Appendix 4. Social networks as a third variable

### Contents

1. The embeddedness argument
2. The structural hole argument

[I]mmigration studies has been frequently ... mined by writers in the theoretical literature on economic sociology. ... [F]oreign-born communities represent one of the clearest examples of the bearing contextual factors can have on individual economic action. With skills learned in the home country devalued in the receiving labour market and with a generally poor command of the receiving country's language, immigrants' economic destinies depend heavily on the structures in which they become incorporated and, in particular, on the character of their own communities. Few instances of economic action can be found that are more embedded. (Portes & Sensenbrenner 1993, 1322)<sup>i</sup>

This appendix looks at the role of social networks as a third variable. Previous studies suggest that social networks would affect the relation between individuals' education and wage (Granovetter 1973; 1983; 1995 [1974]; 2005; 2011; Granovetter & Swedberg 2011; Swedberg 2011; Lin 1999; Burt 1992; 2000; Portes 1985; Portes & Sensenbrenner 1993; van Nieuwenhuyze 2009; Rusinovic 2006; Saxenian 2011; Lancee 2012; Kloosterman, van der Leun & Rath 1999). Social networks would derail individuals' labour market careers because they cause inequality of opportunity.<sup>ii</sup> Some individuals would have better opportunities to benefit from their education and other human capital, resulting in that individuals with similar education may have different wage levels.<sup>iii</sup>

There are two contemporary lines of arguments about how social networks affect individuals' labour market performance. The first one is based on the embeddedness argument, presented by Granovetter (1985; 1995 [1974]) and applied to migration studies for example by Portes & Sensenbrenner 1993. The other line of argument is the structural hole argument, presented by Burt (1992; 2000) and applied to migration studies by Lancee (2012).

### **1. The embeddedness argument**

Below, networks are referred to as social ties, following the original terminology (Granovetter 1973; 1983). This is because when the amount of ties increases, they form networks of ties. The theory was spearheaded by Granovetter (1973; 1995 [1974]). In a classic study (Granovetter 1995 [1974]) he interviewed a sample of males about how they had found their current jobs. The result of the study was that a) sixty percent of the men had found their current jobs through their social contacts and that b) these social contacts were rarely their close friends. Thus, when information about job opportunity came through a personal contact, the contact was often distant.

Granovetter (1995 [1974]) also found that c) information about job opportunities had a great impact on the individuals' job search: their labour market careers followed employment information they

got through these ties. On basis of the findings, he developed a theory in which he called these effects the strength of weak ties (Burt 1992, 26; Granovetter 1973).<sup>iv</sup>

The theory goes that information about job opportunities is an independent variable that affects social mobility (and income assimilation<sup>v</sup>). Later, Granovetter (1985) developed the theory further by arguing that individual action would depend heavily on social structure, i.e. be embedded.<sup>vi</sup>

Weak ties are opposed to strong ties. As will be elaborated in the second part of this appendix, strong and weak ties are rather similar to bonding and bridging social capital (Lancee 2012, 24-30; Putnam 2000, 22-24, 78, 178, 179, 210, 214, 243, 322, 357-358, 362-363, 410, 413; Coleman 1988). Below is explained the combined effect of strong and weak ties, starting with strong ties.

*Strong ties* refer to contacts to family members and close friends; they bind together small groups. In these groups, social contacts between group members are many and communication between them intense (Granovetter 1995 [1974; 1983; 1985; 2011]). These groups have been called cliques (Burt 1992). As a result of the intense communication, members of a clique receive much redundant information from each other (Burt 1992, 19). They are likely to share the same information about most things, including information about employment opportunities. Because individuals' labour market careers follow opportunity information they get, redundant information derails their labour market careers to circulate inside the clique (Burt 1992, 19).

Immigrant communities may be considered as cliques. These jobs are typically rather stable but opportunities to get ahead are not good; these jobs may result in some degree of wage assimilation but reaching jobs that match education is more challenging than in the case of individuals who have more ties to the mainstream labour market. Educational degrees or other human capital is rather irrelevant. A clique reminds the ethnic enclave (Portes & Bach 1985).<sup>vii</sup> a golden cage.

This explains in part, why immigrants experience labour market marginalisation that is not caused by human capital. According to this approach, human capital would affect their labour market status less than in that of natives, because immigrants would depend heavily on social networks. Social networks would derail their labour market careers. Immigrants in cliques get much information about employment opportunities from their strong ties, but for the most part, this information concerns employment opportunities inside the clique.

*Weak ties* refer to labour market contacts (co-workers etc, anyone one meets in work occasions (Granovetter 1973; 1983)). Weak ties help in getting ahead because they provide new information about employment opportunities in the outside. This nonredundant information enables individuals to find employment opportunities from elsewhere, to get out from the clique.

Weak ties connect cliques to each other, or "bridge" them, which affects also other members of the cliques. Through a weak tie, employment information circulating in one clique may reach members of the other clique/cliques. Also they get the same information about employment opportunities elsewhere.

This was a short description of how and why social networks work as a third variable. Because the impact is emphasised in immigrant communities, there exists much previous research about the impact.

The embeddedness argument has been developed further to numerous different directions. For example,

- 1) one social psychological interpretation is that social networks are a form of indirect discrimination;
- 2) approaches that discuss the nature of capital (Lin 1999);
- 3) approaches that discuss competition (Burt 1992; 2000);
- 4) There has also been repeated attempts to connect the macro-level social capital theory (Putnam) with the embeddedness argument (Granovetter). These attempts have been made for example by Burt (2000) and Lancee (2012). They both connect differently the tradition coming from Putnam (1993; 2000) and Granovetter (1985). The terminologies differ and for example Lancee (2012, 155) notes that "the concepts of bonding and bridging are being used to analyse the social capital of immigrant communities, although not always named as such". Lancee (2012), again, analyses embeddedness in immigrant communities but does not call it such.

## 2. The structural hole argument

This part is based on a fresh, yet unpublished review of Lancee (2012). **The topic and research question** of this book are, to which extent social capital can explain labour market outcomes of immigrants. Social capital is the independent variable and labour market outcomes are the dependent variables. The dependent variables include also others than wage, such as unemployment and other mediating variables that affect wage.

Lancee divides social capital to two types, bridging and bonding. The answer is sought by controlling for other independent variables that are likely to affect and by operationalising and measuring bridging and bonding social capital. The study controls for a) the impact of (country-specific) human capital variables and b) the impact of the societal context. The impact of human capital is controlled for by using the UNESCO's International Standard Classification of Education and the studied immigrants' own assessment of their language skill. The impact of the societal context is controlled for by making a divergent comparison between immigrant groups in the Netherlands and Germany. The study can be seen as an immigration-specific application of Burt's (1992) theory of structural holes.

The research question is divided to four sub-questions that structure the book: 1) how can bonding and bridging be conceptualised (chapter 2); 2) to what extent the labour market contexts in Germany and the Netherlands differ and how does this affect the relation between social capital and labour market performance (chapter 3); 3) what are the expected economic returns to immigrants' bonding and bridging social capital (chapter 4); and 4) how can bonding and bridging social capital be measured in these focus groups (chapters 5, 6, 7).

Literature review and review of previous evidence is comprehensive and the hypothesis is based on it. Lancee applies a slightly different theoretical framework than the previous milestone studies about the impact of social networks on individuals' labour market performance, such as 1) Granovetter's embeddedness argument (Granovetter 1985), 2) its immigrant-specific applications by Portes (Portes & Bach 1980; Portes & Sensenbrenner 1993) and 3) the several empirical divergent comparisons that have proved that the impact of social networks is especially great in the case of immigrants (e.g. van Nieuwenhuyze 2009). Despite the different theoretical context, Lancee builds on the key findings of these studies.

**The hypothesis** is based on previous research, mainly on Burt's (1992) theory of structural holes. Lancee argues that the most crucial components of the theory would be the resource argument and argument about the allocation of those resources. The resource argument goes that social capital is capital, in the sense that investments to social relations lead to positive economic returns. Social

capital would yield greater economic returns because 1) social ties connect individuals to valuable resources, such as information about employment opportunities, cultural and linguistic competence, etc. The argument is originally based on Bourdieu and is often considered one of the neo-capital theories that consider capital can be immaterial (unlike classical capital theories originated by Marx, Smith and others).

The allocation argument is that resources stemming from social relations are allocated through bonding and bridging social capital. Bonding social capital enables individuals to get by and bridging social capital enables individuals to get ahead in the labour market hierarchy. This would be because bonding may give privileged access to resources. The flipside of this privilege is that it easily becomes isolated: overly exclusive towards outsiders and overly inclusive towards its members, such as an ethnic minority or a neighbourhood community. These groups may be rich in some resource and poor in some other. Bridging social capital connects resource-poor groups with resource-rich groups and enables resources move from the resource-rich group to the resource-poor one. Bridging occurs when a member or members of one bonded group know individual(s) from another bonded group, i.e. when the internal networks of the bonded groups overlap.

After the hypothesis, Lancee discusses the research design, data needs and method that answer the research question and test the hypothesis. They follow from the research question. The structural hole argument is rather similar to Granovetter's weak tie argument (Granovetter 1973; 1983; 1995 [1974], 6). Lancee however notes that the structural hole argument has not been clearly operationalised to empirical variables that could be measured. Burt develops the theory in his 1992 book "structural holes" and separates between resource-rich and resource-poor (bonded) networks, but does not operationalise the theory too clearly. Many great social theorists have stumbled at this phase, such as Parsons & Smelser (Granovetter 1995 [1974], vii; Parsons & Smelser 1956), who tried to "integrate the economy to a general theory of social systems," (Granovetter 1995 [1974], vii) but ended up in an overly abstract theory that gave little guidelines for future research (ibid.).

Lancee's research design is comprised of two parts. The first one is operationalisation. It seeks to develop a conceptual framework for the analysis of bridging and bonding of social capital of immigrants. The second part is measurement of the variables and identifying the causal mechanisms that link bonding and bridging social capital to immigrants' labour market performance. The divergent comparison shows that the same impact occurs in two different labour market contexts. This data the Netherlands and Germany. Divergent comparisons are often used in studies published in the IMISCOE series, such as by van Nieuwenhuyze (2009) and Vermeulen (2006; see also Vermeulen 2005).

The background theory and focus group determine data needs. Labour market performance (the dependent variable) is measured with several variables (e.g. the percentage of people who are unemployed, employed, self-employed, outside of the labour force, salary, etc, in each focus group). The data is from labour administrations' registers. Bridging and bonding social capital (independent variables) are measured with existing statistical data from a Dutch database (SPVA) and a German one (GSOEP).

The SPVA is a survey, the sample group includes heads of households of four main immigrant groups in the Netherlands. GSOEP is an annually conducted household panel. The sample group includes all immigrants, divided to over ten groups by both country of birth and nationality (these grounds follow from classification in the existing data). As in the Dutch SPVA, labour market performance is measured with several variables.

In both countries, independent variables are the same. Bonding is measured with variables that constitute closure (Coleman): such as family and community ties. Bridging is measured with variables that constitute structural holes, such as interethnic ties and how much visits an individual receives from natives. Some of these variables, such as family ties, are usually considered bonding social capital, but Lancee concludes that in multi-ethnic families, such ties are bridging.

Both the independent and dependent variables suffer from some problems concerning sampling, validity and reliability. Most of these problems are addressed by the author: for example, both the SPVA as well as GSOEP data are cross-sectional which equals difficulties in separating correlations from causal relationships. A relation between the variables exists but causality cannot be determined statistically. In statistics, this criteria (X precedes Y in time) must be met in order to claim a relation between two variables is causal (and if it was, which way the causality goes: does social capital cause better labour market performance, or vice versa).

**The research was carried out** by analysing the data with statistical methods that help to lure some hints of causations from cross-sectional data. In the Netherlands, the research was carried out by analysing the independent variables (interethnic contacts) with two scaling models that in part help to overcome the causality problem. The German data, again, was analysed in two ways: firstly, with fixed-effect (fixed intercept) model that includes only time-varying variables and, secondly, with random-effects models that show the causal effects of time-constant variables. These methods of analysis cannot eliminate the problem that follows from cross-sectional data, but they elaborate the relationships.

**The results are summarised and reported** in the last section. Lancee pulls together the findings by arguing that bridging social capital helps immigrants to get ahead in the labour market, whereas bonding does not. The exceptions were interethnic family ties.

These findings are based on correlational associations in the cross-sectional datasets. Generally speaking, similar kinds of correlations were found both in Germany and the Netherlands, but the labour market context, ethnic group and gender were associated with the correlations.

Lancee notes that the results cannot readily be generalised to other labour markets, because the Dutch and German ones are rather similar with each other but distinct from some less rigid labour markets.

To summarise the review, Lancee does groundbreaking work when trying to conceptualise and empirically measure bridging and bonding social capital. Unfortunately, cross-sectional data and samples that are not very representative for example concerning the SPVA, lead to reliability and validity issues. Also, Lancee measures both structural and cognitive social capital and I consider the cognitive social capital consists of unempirical and invalid variables, such as survey responses to questions like "it is best for children to live at home until they marry". Cognitive social capital variables are empirically inexact and raise thus great validity issues that perhaps they are not too suitable for quantitative analysis. Otherwise, concerning the "structural" social capital, i.e. all the other forms Lancee processes, the study is good job. It discusses its limitations openly, instead of trying to hide or ignore them. It would be interesting to read results from similar kinds of studies conducted with data from clearly different labour market contexts, that is, from different worlds of welfare capitalism.

*Conclusion*

From the point of view of operationalisation, even if the definitions were agreed, it is doubtful whether social networks, or their exact impact on wage, can be measured. Portes & Sensenbrenner (1993) try to operationalise the concept of embeddedness and Lancee (2012, appendix) measures the impact by using completely different variables. One may ask 1) are the measured variables the right ones and 2) are correlations between them and labour market status' causal. A third measurement issue is that researchers have not agreed if exclusive social networks were a form of indirect discrimination.

discrimination looms behind the measurement problem, like it does in the case of human capital (appendix 2). "In the words of Granovetter (1995 [1974], 3), "[c]omplete and systematic data on job opportunities is extremely hard to collect."

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<sup>i</sup> One could wonder, why their human capital is devalued; the reason is not a topic of the theory of embeddedness. However, devaluation of human capital is a key factor that makes immigrants depend heavily on their social ties. The prevailing situation is analytically as excellent as its causes unexplained (appendix two on “country-specific human capital”

<sup>ii</sup> Also discrimination is suggested to cause inequality of opportunity. See appendix four and Kraal, Roosblad & Wrench (2009).

<sup>iii</sup> The human capital explanation of this variation is different (Acemoglu & Autor 2009) but these hypotheses do not necessarily rule each other out. In order to test which theory is correct to which extent, we would need from both approaches exact independent variables, but these do not exist, because inexact definitions underpin measurement problems.

<sup>iv</sup> The findings lead to two influential theories and a new research discipline, economic sociology, that consists of great numbers of later studies and applications (a benchmark publication in economic sociology is Granovetter & Swedberg 2011).

<sup>v</sup> The income assimilation argument is my own interpretation. I find that this is obvious.

<sup>vi</sup> Granovetter (1985) connected this argument to previous findings and theories by Bourdieu (1985) and Polanyi (Granovetter 1985; Polanyi 1944; Portes 1998). Similarity to Weber has also been stressed (Swedberg 2011; Weber (1978 [1921-1922])

<sup>vii</sup> This connection is my own interpretation.