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# Immigration Perceptions

DO SOCIO-ECONOMIC AND PERSONAL CHARACTERISTICS DECIDE  
PERCEPTIONS TOWARDS MIGRATION?

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The views stated in this thesis are those of the author and not necessarily those of the supervisor, second assessor, Erasmus School of Economics or Erasmus University Rotterdam.

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# **1. Introduction**

Immigration is currently one of the most controversial topics in societal discourse. Immigration perceptions are important points of discussion across all parts of daily life: from politicians in parliament to heated family dinners. Whether it pertains to housing, grey pressure, or different forms and quantities of migration, many people tend to have their opinions regarding the topic at the ready. This is specifically visible through elections. Recently the Dutch anti-immigration party PVV has improved on its election results. Both in the 2023 national and the 2024 European elections, the far-right party increased their previous seats total. As such the party became the biggest Dutch political party in the national parliament and the second biggest in the European parliamentary elections.

The topic is particularly important because of the scale of immigration. In 2024 9% of all European Union (EU) citizens were born outside of the EU (European Commission, 2024). As such a significant part of the European populous has personal experience with immigration or knows someone who has immigrated into the EU. While immigration has been around since the dawn of humanity, non-Western immigration has sparked far-right conspiracy theories such as the 'Great Replacement' theory, to gain traction in Europe and North America (Ekman, 2022). This idea of ethnically homogenous nations being 'replaced' by other peoples has further politicised immigration. All of this has brought immigration to the forefront of societal discussion in the Netherlands.

In these discussions economic reasons are often cited for either side of the debate, be it the strain on the housing market or its influence on public debt. However, it remains to be seen if this actually influences individuals' immigration perceptions. Previous research has found that the size of non-economic reasons for immigration perceptions are two to five times more important in determining immigration perception (Card, Dustmann, and Preston, 2012). Similarly, racial and ethnic concerns are of major importance in shaping immigration perceptions (Dustmann and Preston, 2007). Hence, the precise cause of how perceptions of immigration are shaped becomes more important. After all, this is of vital importance for policymakers and researchers alike. For researchers, the traditional framework of purely analysing economic relations has become redundant due to such findings. This opens the possibility of further research into immigration perceptions. For policymakers research into the cause of immigration attitudes could help explain the effectiveness and effects of policies. This could, for instance, be achieved by creating more effective integration policies if the personal considerations of natives are better understood. Furthermore, a comprehensive view of the ways in which immigration affects individuals is important to be able to draft immigration policy. Perhaps a slight part of the human psyche and perceptions could even be revealed by carrying out this research.

To find the effect of individual characteristics on immigration, socio-economic characteristics are the most interesting to test for the field of economics. This is because their impact on other economic phenomena is already widely studied, allowing for cross-research policy recommendations. Other characteristics that might be of interest to policymakers include personal characteristics such as trustfulness. These characteristics are different from socioeconomic characteristics insofar as they pertain to human emotion and character rather than objective descriptors. Their relation to immigration attitudes is particularly important to know for policymakers as it is possible to manage social expectations and psyche. Perhaps this could be used to better align the political messaging with specific policy goals. It follows that investigating both socio-economic and personal characteristics is of importance. It is near impossible to explain the full scope of why individuals have certain attitudes towards immigration. Even investigating all socio-economic relations can be a herculean task given the large number of possible characteristics. However, investigating specifically chosen relationships could still provide a deeper understanding of immigration attitudes. This improved knowledge of immigration perceptions could expand current academic understanding. This, in turn, can inform policy-making and political discourse to help improve decision-making.

Based on these observations there seems to be a social and academic necessity to review the question: “*How do personal and socio-economic characteristics influence immigrant perception?*”. By answering this question this research aims to deepen the academic understanding of immigration perceptions.

Previous research on the effect of personal, and socio-economic characteristics on attitudes towards migration is relatively extensive. However, important findings in previous research use currently outdated data (Dustmann and Preston, 2006; Dustmann and Preston, 2007; Kehrberg, 2007). Furthermore, more recent studies tend to be focused on isolating individual characteristics and use fewer variables for control purposes (Lancaster, 2022; Newman, Hartman, Lown, and Feldman, 2015). This thesis addresses this by utilising many of the same observables as earlier research but with more recent data.

As such it seems that a better understanding of immigration perceptions has both social and academic relevance. To answer the research question two hypotheses have been formulated. These are as follows:

*H1: the effects of economic characteristics on immigration attitudes found in Dustmann and Preston (2006) are consistent in the Netherlands for the years 2017 to 2022.*

*H2: The personal characteristics of happiness, trustfulness and empathy positively influence immigration perception.*

To answer these hypotheses Dutch immigration attitudes, derived from survey questions are regressed on socio-economic and personal characteristics. This data is obtained from the LISS panel data, a representative sample of the Dutch population, for the years 2017 to 2022. Based on this empirical analysis it is found that trustfulness can account for nearly a fifth of the variation in immigration attitudes. Furthermore, students and university graduates are significantly more positively inclined towards immigration than their peers in other social classes or with different educational backgrounds. Finally, it is found that life happiness has a significant negative correlation whereas empathy is positively correlated with immigration perception.

To establish these findings, the next section explores the related literature and motivates the hypotheses. Hereinafter the data, methodology, and independent, and dependent variables are identified. Using this methodology a simple OLS and a Fixed effects model are further explored. To test these results a simple RDD to account for COVID-19 and estimation using a different independent variable are carried out in section 5. To conclude this research a retrospective will be offered in the discussion, followed by the conclusion section answering the main research question.

## ***2. Related Literature***

As was previously mentioned there is extensive previous research into identifying why people have certain perceptions of immigration. First, I discuss the theorised importance of the dependent variables on immigration perceptions. Secondly, I detail important previous research and the role that this research has within the existing literature. Finally, it is important to note that for the remainder of this paper, the terms migration attitudes and perceptions will be used interchangeably as they are both used in previous academic research as synonyms (Dustmann and Preston, 2007; Lancaster, 2022).

### ***2.1 Theoretical Framework***

In his address to the Nobel Week Dialogue 2023, Professor Christian Dustmann argues that the effect of immigration on the economy affects immigration policy specifically through individuals' perception of the effect of immigration (Nobel Prize, 2023, 0:06:45). The reason for this is quite intuitive; in democratic countries, policymaking is largely determined by public opinion and especially policymakers and politicians are affected by individual perceptions of the effect of immigration. Furthermore, this effect is particularly striking when the importance of public opinion on programme effectiveness is considered. For instance, if a policy is particularly unpopular, extra costs are needed to bring both the populous and working personnel on board. On a local level, town hall meetings and other information campaigns

might be sufficient. However, on a national level, similar campaigns might be costly and drain the public budget.

The difficulty, however, is that attitudes towards migration are also affected by non-economic reasons such as ethnicity, place of origin, personal characteristics of the native population and how immigration affects neighbourhood composition. These non-economic reasons for immigration perceptions are also important considerations for policymakers and academics alike. Based on this framework the main research question was inspired.

Within these personal characteristics and preferences, I am most interested in analysing three underutilised dimensions. The first one of these dimensions is empathy. Empathy is defined in this thesis as “the action of understanding, being aware of, being sensitive to, and vicariously experiencing the feelings, thoughts, and experience of another” (Merriam-Webster.com, 2024). This probably has a strong positive effect on immigration perceptions. After all, if one is better able to identify and understand the struggles of someone else it might very well shape their perception of them. Another characteristic I take into account is happiness, specifically, happiness with one’s own life. Similarly to the reasoning behind the inclusion of empathy as a variable a more positive outlook on life might lead to a more positive outlook on immigration. This might be the case as happier people tend to see more of the positives in life. Because of this they might focus on the positive rather than the negative aspects of immigration. Finally, the personal characteristic of trustfulness. A common remark against immigration is that immigrants steal and are not to be trusted. If such sentiments are important in opinion-making about immigration people value trustworthiness in immigrants. This might be due to public budgetary, national or personal safety reasons. For instance, in 2000 a majority of respondents in the United States believed further immigration further contributes to the amount of crime (Simes and Walters, 2014). In reality immigrants were 2-3 times less likely to commit crimes than native citizens (Vaughn and Salas-Wright, 2018). As such, if people trust people more easily in general have more positive attitudes towards immigration there might be a relation between trust in immigrants and immigration perception. For policymakers this might make it important to change the narrative of immigration. All three of these personal characteristics could thus have a causal effect on immigration perceptions.

However, there remains the possibility of reverse causality. For instance, in the scenario that someone is so preoccupied with immigration that it affects their mental state. While this is possible, it seems more likely that this is associated with more overarching feelings of contempt. Regardless it is important to keep the possibility of reverse causality in mind. Either way, it is important to note that it is more likely than not that there are variables outside of the model that could still affect immigration perceptions and personal characteristics. As such it

is likely impossible to speak of conclusive causality. Apart from this research's own expectations it is important to discuss the findings in previous research.

## ***2.2 Previous Empirical Findings***

Previous research on the effect of personal and socio-economic characteristics can generally be subdivided into two groups of research: those investigating the effects of socio-economic characteristics and those investigating the effects of personal characteristics. This distinction may seem obvious and perhaps trivial, however, the focus of most of this previous research is important for understanding the wide array of characteristics influencing immigration perceptions.

One set of research looking into how different reasons influence immigration perceptions was carried out by the same researchers over three separate studies (Dustmann and Preston, 2006; Dustmann and Preston, 2007; Card, Dustmann and Preston, 2012). These three papers looked into different reasons to identify immigration perceptions but used similar methodologies and similar data. Namely, the first and last of these papers make use of the 2002 European Social Survey (ESS) as their data source which has uniformly administered opinion polling survey data with thousands of observations for the 22 participating countries. Meanwhile, the second paper made use of the British Social Attitudes Survey for the years 1983 to 1990 excluding 1988.

The first paper in the series investigated the importance of the main three economic reasons they could identify for people to be opinionated on immigration: labour market competition, public finance effects, and higher efficiency in national markets. Labour market competition would mostly apply to those who would be outcompeted in the labour market which would negatively influence opinions on immigration. Public finance effects would pertain to the effect that immigration has on public finances, whether it adds further burdens or increases tax revenue. Finally, higher efficiency in national markets could be achieved through immigration, for instance, if there is a shortage of doctors or plumbers an external influx of these working professionals would decrease wages and make the services cheaper for the consumer. This could, in turn, influence people's views on the need for immigration.

Contrary to the purely economic scope of the explanatory variables of the previous research, Dustmann and Preston (2007) investigate whether racial and cultural concerns are also of importance for the formation of immigration perceptions.

Thirdly, the series of research is finalised by extending with compositional concerns such as the effect of immigration on individuals' neighbourhoods, schools, workplaces or other similar non-economic reasons (Card et al., 2012).

All three of these papers utilise a variation of the following methodology with the main composite reasons influencing immigration perceptions being labelled 'latent variables'. To

reiterate: these are racial, cultural, economic and compositional concerns. With this backdrop, the methodology is split into three steps. The first step is to include socio-economic and other observations from the survey data in an unordered probit or Ordinary Least Squares (OLS) model on observation and indicator variables. Assuming the residuals can be partially explained by the latent variables this is regressed using a minimum distance method. Finally, the third step is to use the structural parameters of step two to compute the coefficients that link the latent factors to the observables. Using these the full models were computed and estimated.

Based on these models the first research found that economic competition concerns are largely represented by overall public burden concerns which are not merely contained to the labour market. This has shown that economic reasons for immigration perceptions were not merely contained to the labour market and the role of immigration as an exogenous shock.

The follow-up study (Dustmann and Preston, 2007) found that cultural and racial concerns are an important channel associated with opinion towards further immigration. This was partially achieved by separating the data into attitudes towards migration from: the West Indies and India; Asia; Europe; Australia and New Zealand. Furthermore, Brits working in manual and unskilled labour sectors were not found to have greater labour market concerns. However, labour market concerns are an important channel of immigration preference among higher educated respondents.

Finally, in Card et al. (2012) it was found that compositional latent variables were two to five times more important in explaining the variation in immigration perceptions than socioeconomic reasons. Thus, concerns over compositional amenities such as culture and religion were found to be more important in understanding the variation in attitudes than economic reasons.

Other research on immigration perceptions focussed more on personal characteristics rather than explicitly on the interaction with economic reasons. As such some research used the Big Five personalities framework (Vecchione et al., 2012; Dinesen et al., 2016), some looked into the effect of humanitarian concern (Newman et al., 2015), the effect of age and birth cohorts (Lancaster, 2022), or the effect of happiness on migration perception (Panno, 2022).

To start, the Big Five personality framework is a prevalent theoretical model from the field of psychology. The five personalities are Openness, Conscientiousness, Extraversion, Agreeableness and Neuroticism. These are approached as broad domains that incorporate hundreds if not thousands, of traits (Goldberg, 1993). The first one, Openness (to Experience), showcases the contrast between an individual's imagination, curiosity and creativity and their shallowness, and imperfectness; Conscientiousness, also known as dependability, contrasts



traits of organisation and reliability with carelessness and negligence; Extraversion contrasts talkativeness and activity level with passivity and silence; Agreeableness contrasts kindness and trust with selfishness and distrust; finally, Neuroticism is characterised by nervousness and temperament. Vecchione et al. (2012) analysed the importance of these five and the basic values of universalism and security by making respondents compare themselves to 40 portraits of individuals and their values using a Portrait Values Questionnaire (PVQ). This way they could infer respondents' personalities and values. The data was gathered by university students from Italy, Spain and Germany who were asked to gather two to four respondents balancing the distribution of age and gender. Furthermore, the survey questions investigating the survey questions of the ESS on immigration perception were copied to formulate the dependent variable. These values were ordered on a scale from 1 to 5. As control variables socioeconomic observables and interaction effects were used. From this, there were significant covariations between perceptions of immigration and individual differences in values (universalism and security) and traits (openness and agreeableness) found. Inherent deep-rooted personality traits seem to be defining characteristics for determining immigration perceptions. However, because of the data collection, it is not generalisable.

Nonetheless, these findings are similar to findings from Denmark in which specifically agreeableness and conscientiousness were found to moderate the importance of skill level for immigration perceptions (Dinesen et al., 2016). These two personality traits were thought to be important through the common importance of empathy in these personality traits. In this vignette study, 2,862 Danish citizens responded to an online survey that randomly assigned them to answer one of four questions asking whether more high- or low-skilled immigrants from Western or non-Western countries should be allowed to move to Denmark. The Big Five personalities were inferred from a 60-item inventory of 12 questions asking for agreement on a 5-point Likert scale. These were then used to construct variables ranging from 0 to 1 for the levels of each personality trait. Using these and modelling for interaction effects four simple OLS models were formulated which were used to reach the previously mentioned conclusions.

Similarly, research into the importance of humanitarian concerns on immigration perceptions was carried out (Newman et al., 2015). In truth, this study analysed three datasets to test the validity of its own findings. Firstly, in 1996 a nationally representative survey conducted in the United States of America (USA) was used to construct an Ordered Logistic Regression model. As dependent variables survey questions were used on whether immigration should increase or decrease, and whether welfare benefits ought to be delayed for a year. The independent variables were taken from a scale of four items tested against a 1995 study to construct a measure of humanitarianism. The same methodology as for the first dependent variable was repeated using data from 2005. The third method of analysis was carried out using data from a 2012 vignette survey in North Carolina. In this study, four

fabricated news stories about immigration legislation for immigrants from Honduras were used. Using random assignment they tested the importance of whether the existence of a humanitarian crisis was included or not. This change was regressed with socio-economic control variables similar to the ones in the earlier studies. Based on these three studies the paper found that humanitarianism provides a strong indicator of white Americans' immigration perceptions. Additionally, humanitarianism makes people more sympathetic towards having benefits programmes extended to immigrants.

Furthermore, Dutch birth cohorts were specifically investigated and tracked over time to track their importance on immigration perception. This data is obtained from the Longitudinal Internet studies for the Social Sciences (LISS) panel, a representative data panel of the Dutch population. Survey data from 2007 to 2019 was taken to test for trends over time of birth cohort and age effects on immigration perceptions. Using nine different questions related to immigration in the panel the dependent variable was constructed. Using simple OLS using time variables and birth cohorts as explanatory variables it was found that Immigration perceptions were stable within birth cohorts throughout the panel and exhibited little variation (Lancaster, 2022).

Finally, data from the ESS in 2014 was used to estimate the effect of happiness and social dominance orientation on immigration perception (Panno, 2022). Social dominance orientation was measured by combining survey answers on cultural superiority. Meanwhile, happiness was approximated by answers to the question "How happy would you say you are?". Finally, immigration perception was calculated by combining three survey questions on immigration perception into a singular variable. Using least squares analysis and correlations between the three variables the effects between each variable were plotted. Following, it was found that happiness is positively correlated with immigration perception.

## **2.3 Hypotheses**

Based on these previous findings this research has arrived at its hypotheses. Previous findings have investigated certain effects of both socio-economic and personal characteristics on immigration perception. As such, to be able to answer the research question, these previous results might have to be revisited. This has led to the following hypothesis:

*H1: the effects of economic characteristics on immigration attitudes found in Dustmann and Preston (2006) are consistent in the Netherlands for the years 2017 to 2022.*

The conclusions of Dustmann and Preston (2006) are tested with more recent data from the Netherlands to test whether their findings still hold to this day. These effects are specifically as follows: higher education, having an immigration status, living in a more urban

area (city or town), being a student, have positive effects on migration. There is also a decreasingly positive effect of age. Furthermore, negative effects of being unemployed, inactive in the labour market, partaking in housework, or belonging to a minority group were found. Additionally, other papers investigating similar relations are also investigated to ensure the validity of this first hypothesis (Dustmann and Preston 2007; Card, Dustmann and Preston, 2012; Vecchione et al. 2012). While it is likely that the findings still hold, many social changes have happened throughout the years that have affected all aspects of life. After all, the 2001 wave of the ESS which is used by Dustmann and Preston (2006) was carried out four years before the first iPhone came out. Many societally impactful changes have happened since then. Through answering this hypothesis previous findings on this relation are either reinforced or challenged. As such, it might clarify how socio-economic characteristics influence personal perceptions of immigration.

Apart from investigating socio-economic characteristics, this thesis is also interested in personal characteristics. Contrary to the first hypothesis, the second hypothesis investigates only three personal characteristics. These are formulated as follows:

*H2: The personal characteristics of happiness, trustfulness and empathy positively influence immigration perception.*

While there are thousands of different characteristics that could influence immigration perception this hypothesis focuses on three: happiness, trustfulness and empathy. These were chosen as they indicate an individual's outlook on life. If an individual has a more positive outlook on life, it is possible that they are also more positively inclined towards immigration. Furthermore, these three characteristics are not explicitly tested by the Big Five personalities framework. If the hypothesis holds this could signify a larger importance of personal characteristics on immigration perception. This helps towards answering the main research question. If this hypothesis does not hold, the perception of immigration can be assumed to either be negatively or not at all influenced by these personal characteristics. This could imply the necessity for further research into the topic.

As such, this research adds to the existing literature by making use of previous frameworks of research (Dustmann and Preston, 2006; Card et. al, 2012) and extending using the specific personal characteristics of happiness, empathy, and trustfulness.

## ***3. Empirical Strategy and Data***

### ***3.1 Data***

The data used for the analysis is taken from the LISS panel. The panel has survey data consisting of 7,500 surveyed individuals which is monitored to be a representative sample of the Dutch population. The panel is managed by the non-profit organisation Centerdata which is partnered with Tilburg University. Furthermore, it is invite-based and for individuals who do not have access to the internet or a computer a simple computer is provided. From the LISS panel, the core longitudinal study which has gathered annual data on participants' answers to background questions, political opinions, economic situations, and other personal survey data since 2007 is used. From this core study the datasets "1 Background information" and "7 Personality" were used to gather the relevant socio-economic and personal characteristics. Dataset 8 "Politics and values" was used to gather respondents' views on immigration and the Dutch anti-migration party the PVV. This latter point will be further explored in the robustness section of this thesis. Furthermore, data from waves 10 to 15 corresponding to 2017 until 2022 were chosen. These years were chosen because they were (1) the most recent completed waves and (2) the only years in which the survey data gathering socio-economic and personal characteristics were measured before the immigration perceptions. The latter is the case as earlier waves of the LISS panel would send out the survey questions for the dependent variable before the independent variables. The opposite of this is necessary to establish causality as it is impossible for future income to influence an individual's past attitudes towards migration. To achieve this personality data was taken each year in May and the background characteristics, such as wage and urbanity, were taken from December as this coincided with the month in which the dependent variables were observed.

A limitation of this approach is that the lack of a longer timeframe makes us unable to discern long-term trends in the data. Furthermore, the lack of data from other countries makes the external validity of this research hard to prove. As such, while the data retained its usefulness as a representative sample of the Dutch population it is impossible to extend the conclusions of this research to other countries.

### ***3.2 Methodology***

Using this data there are two main methodological ways in which I try to answer the research question. The first of these methods is an OLS regression with time dummy variables for each year to try and estimate the effects of the socio-economic and personal characteristics observed using the survey data. This method will allow for the estimation of more permanent

characteristics of individuals on immigration perceptions. To account for the panel data format of the data, individual clustered variables are used in the OLS regression.

Secondly, a fixed effects model is estimated using the time-varying variables from the OLS regression to find the effect of those characteristics which are prone to change over time. These are specifically important as, contrary to time-invariant characteristics, policymakers can influence these characteristics. However, some variables have low variability across the years which could affect the reliability of this methodology.

The easiest way of writing out the methodology is through matrix algebra given the extensive amount of observables used to estimate the dependent variables. As such, the main regression equation is as follows:

$$y^* = AS + BP + v$$

In this equation, S is an  $n \times k$  matrix for the chosen socio-economic characteristics. These characteristics are as follows: Wage; Year; Labour market status; Education; Immigrant status; Urban status of home; Gender; Foreign background; and Age. Only the variable wage will be logarithmically transformed to improve the interpretability of the coefficient. P is an  $n \times 3$  matrix detailing the personal characteristics of trustfulness, happiness, and empathy. The difference between S and P is purely to differentiate between socio-economic and personal characteristics within the equation and is functionally only aesthetic. Meanwhile,  $y^*$  is the estimator of the four different dimensions of immigration perceptions. A and B are  $k \times 1$  and  $3 \times 1$  vectors for the regression coefficients respectively. Finally, v is a  $1 \times n$  vector containing all error terms. This means that the relevant matrices in the equation are as follows:

$$S = \begin{bmatrix} \log(W_1) & \cdots & A_1 \\ \vdots & \ddots & \vdots \\ \log(W_n) & \cdots & A_n \end{bmatrix}$$

Where W stands for wage and A stands for Age. The logarithm of an individual's wage is taken to account for the large values and to make the data more easily interpretable. And,

$$P = \begin{bmatrix} Em_1 & H_1 & T_1 \\ \vdots & \vdots & \vdots \\ Em_n & H_n & T_n \end{bmatrix}$$

Where Em stands for empathy, H for happiness, and T for trustfulness.

Hereinafter I construct a fixed effects model. The matrix-form equation of this model is the following:

$$V = X\beta + F + \epsilon$$

In this regression,  $X$  is an  $(n \times t) \times q$  matrix containing the following time-varying socio-economic and personal characteristics: Wage; Labour status; Urban status of home; Age; Empathy; Happiness; and Trustfulness. These are the only variables from the earlier regression that vary over time.  $V$  is the estimator of the constructed immigration perceptions dependent variable. Meanwhile  $\beta$  is a  $q \times 1$  vector for the relevant coefficients.  $F$  is the individual and annual fixed effect for individuals from 2017 to 2022. The combination of these fixed effects is meant to capture individual and annual effects and account for the panel data format of the data. This is shown using an  $(n \times t) \times 1$  vector. Finally,  $\epsilon$  is an  $(n \times t) \times 1$  vector detailing the error terms of every observation. This can be best shown as follows:

$$X = \begin{bmatrix} \log(W_{11}) & \cdots & T_{11} \\ \vdots & \ddots & \vdots \\ \log(W_{NT}) & \cdots & T_{NT} \end{bmatrix}$$

And for the fixed effects,

$$F = \begin{bmatrix} \alpha_1 + \gamma_{2017} \\ \alpha_1 + \gamma_{2018} \\ \vdots \\ \alpha_1 + \gamma_{2022} \\ \alpha_2 + \gamma_{2017} \\ \vdots \\ \alpha_n + \gamma_{2022} \end{bmatrix}$$

Where  $\alpha_i$  stands for individual-specific fixed effects and  $\gamma_t$  time-specific fixed effects.

As the data is in the form of panel data, measuring individual responses and personal characteristics, I use the unique personal identifier provided by the LISS panel as the cluster variable. This is not only done avoid heteroskedasticity, which could be done with robust standard errors already, but also intra-cluster correlation. This is necessary to account for as individual observations are not entirely independent from each other. After all, an individual can have up to 6 observations across the period of analysis. As such, clustered standard errors are more appropriate than robust or conventional standard errors which cannot account for intra-cluster correlation.

### 3.3 Dependent Variables

To be able to carry out this methodology the right variables need to be chosen. In the dataset four survey questions were found to contribute to explaining migration attitudes. As can be seen in Table 1 these variables approach migration attitudes from four different perspectives, namely: economic, cultural, asylum, and general sentiment towards foreigners. All four survey questions were measured on a scale from one to five. As it is hard to do separate analyses of each variable for each regression and robustness check, it is easier to make a synthetic variable taking the mean of all four variables. Furthermore, this makes interpreting overall trends easier. This is achieved by taking the arithmetic mean after adjusting the data to report from least to most pro- on a one-to-five scale. This is done similarly to Lancaster (2022). Some nuances might be lost by taking the overall mean; however, an overall constructed dependent variable better reflects overall immigration perceptions in the Netherlands. This variable is called the mean migration attitude (MMA) in any further analysis.

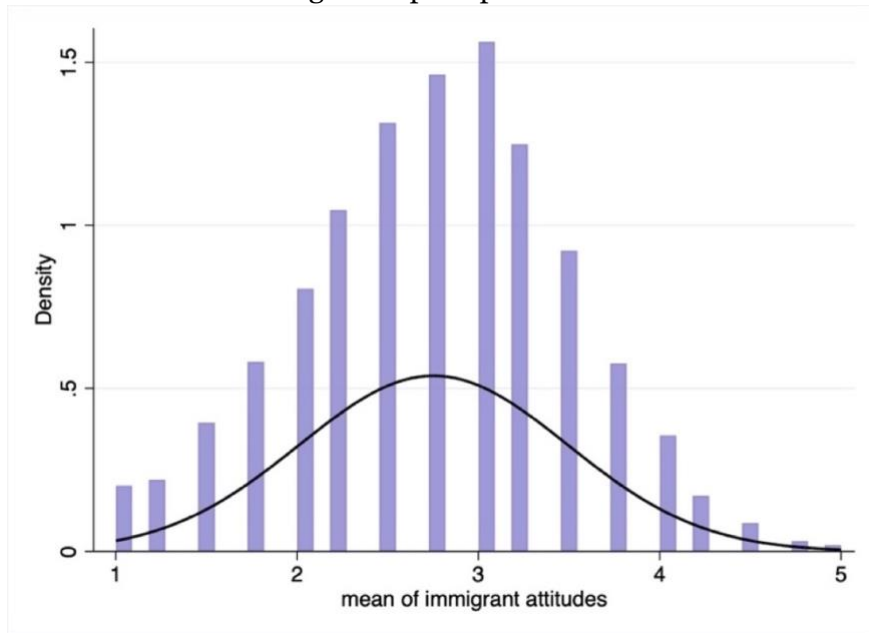
Both the individual component survey answers and MMA are taken as dependent variables in subsequent analyses to try to provide the most accurate representation of individuals' migration perceptions and the composite reasons.

**Table 1** Descriptive statistics and specification of the dependent variables

Variable Name	Survey Question	Range of responses	Obs.	Mean	Std. dev.
Economic	Some sectors of the economy can only continue to function because people of foreign origin or descent work there	1: fully disagree 5: fully agree	33,986	3.322	0.986
Cultural	Where would you place yourself on a scale of 1 to 5, where 1 means that immigrants can retain their own culture and 5 means that they should adapt entirely?	1: immigrants can retain their own culture 5: immigrants should adapt entirely to Dutch culture	33,323	3.500	0.960
Asylum	It should be made easier to obtain asylum in the Netherlands	1: fully disagree 5: fully agree	33,986	2.264	0.956
General	There are too many people of foreign origin or descent in the Netherlands	1: fully disagree 5: fully agree	33,986	3.118	1.066
Mean Migration Attitudes (MMA)	Composite ordered mean of the responses to the other four markers	1: most opposed to immigration 5: most open towards migration	30,909	2.752	0.741

To better understand and visualise the data, I constructed histograms to show the normality of each of the different dependent variables. These are visible in Figure B.1 in Appendix B and Figure 1 found below. These show that asylum, cultural, and economic immigration attitudes are not normally distributed. However, the mean and general variables

follow a slightly shifted normal distribution. This last part is vital as OLS regression assumes the normality of the dependent variable. As such, the reliability of the necessary T-test is the highest for the constructed mean migration perception.



**Figure 1** Histogram of the mean of immigration perceptions

### ***3.4 Independent Variables***

To be able to determine the effect of socio-economic and personal characteristics on immigration it remains important to specify the socio-economic and personal characteristics of interest. As the scope of socio-economic characteristics is too wide to completely contain within this research, let alone a regression, a selection of these has to be made. The variables chosen for this were taken from the initial unrestricted probit model of Dustmann and Preston (2006). These are the following: Labour market status; Level of education; Immigration status; Gender; Age; and whether the respondent lives in a city or a town. These variables were chosen as it makes it possible to answer hypothesis 1. Similarly to Lancaster (2022), age categories are used to avoid collinearity with the time variable, a categorical variable of the year of observation. Additionally, for further variability of the data, the wage is taken. This is used as migration theoretically has a direct effect on wages through labour market competition. Descriptive statistics for all independent variables can be found in Table 2.

There are still ways in which the independent variables differ between this research and Dustmann and Preston (2006). For instance, there was no specific minority variable available. As such, this variable had to be omitted. Furthermore, instead of two separate variables discerning whether people live in a city or a town, the LISS panel data allows for a single variable with degrees of how urban the respondent's dwelling is based on population density per squared kilometre. Levels of education are specified using the Dutch education system which separates secondary and higher education into three separate levels. The education



variable in Dustmann and Preston (2006) does not have this specification. Immigration status is separated into Western, Non-Western, first-, and second-generation rather than which parent is of immigration origin.

On top of these variables, net monthly wages; empathy; happiness; trustfulness; and a dummy variable of the year of observation are included as predictive variables. As for net wages, the first and ninety-ninth percentiles are dropped to eliminate outliers. Furthermore, the logarithm of net wage is taken as the size of the coefficients the logarithm is more intuitive.

Finally for all survey question variables observations detailing that the respondent either did not have an opinion (by answering “don’t know”) or did not want to respond were dropped to ensure that extreme outliers do not affect the generalisability of the data. Based on these different specifications the remainder of the entire research population was taken for this study.

**Table 2** Descriptive statistics of the independent values

Note: \* Prevocational secondary education \*\* senior general secondary education and pre-university secondary education \*\*\*

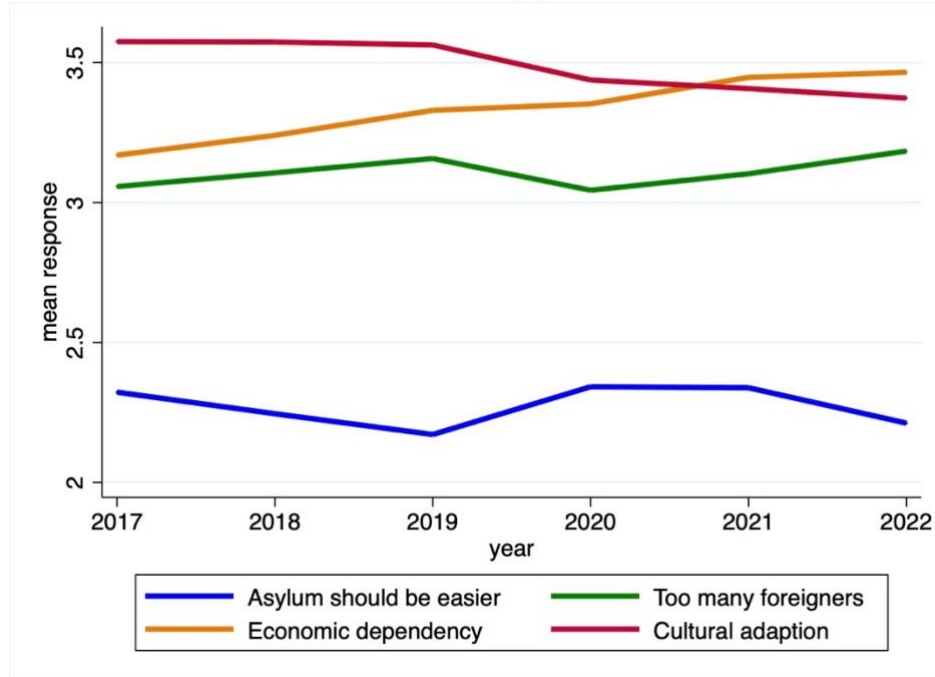
Variable Name	Measurement	Min. – Max.	Obs.	Mean	Std. dev.
Log(net monthly wage)	Imputed net monthly wage in december <sup>1</sup>	(0; 8.496)	43,707	7.332	0.692
Labour status	“Please indicate in the list below what best describes the members of your household.”; rewritten to follow the framework in Dustmann and Preston (2006) <sup>2</sup>	1: Active 2: Unemployed 3: Inactive 4: Housework 5: Student	56,093	2.540	1.595
Age	Age in CBS categories (14 and younger; 15-24 years; 25-34 years; 35-44 years; 45-54 years; 55-64 years; 65 years and older)	(0; 122)	58,459	43.300	22.977
Urban	Variable constructed based on the postal code of the household; urban character: surrounding address density per km <sup>2</sup>	1: extremely urban; 2500 or more 2: very; 1500 - 2500 3: moderately; 1000 - 1500 4: slightly; 500 - 1000 5: not; less than 500	58,025	3.043	1.391
Empathy	Please use the rating scale below to describe how accurately each statement describes <i>you</i> . - Sympathize with others' feelings.	1: very inaccurate 5: very accurate	26,510	3.958	0.752
Happy	On the whole, how happy would you say you are?	0: totally unhappy 10: totally happy	30,646	7.411	1.353
Trustful	Generally speaking, would you say that most people can be trusted, or that you can't be too careful in dealing with people?	0: You can't be too careful 10: Most people can be trusted	30,650	6.032	2.211
Education	Level of education in CBS (Statistics Netherlands) categories	1: primary school 2: vmbo* 3: havo/vwo** 4: mbo*** 5: hbo**** 6: university	55,169	3.461	1.660
Foreign background	Variable constructed by LISS panel based on variables from the Religion and Ethnicity data	0: Dutch 101: first generation Western 102: first generation Non-western 201: second generation Western 202: second generation Non-western	40,988	28.945	63.776
Gender	Entered manually by participants	1: Female 2: Male 3: Other	58,459	1.515	0.500

secondary vocational education \*\*\*\* Higher vocational education; <sup>1</sup>For all years of observation net monthly wage was taken specifically in December; <sup>2</sup>Original survey question included thirteen categories which have been rewritten into the framework of Dustmann and Preston (2006)

## 4. Results

### 4.1 Introduction

To be able to effectively answer the two hypotheses of this research using the aforementioned data the previously discussed methodology is applied in this chapter. As such, this section first discusses the proposed OLS regression model, after this, the Fixed Effects model is carried out. Finally, the findings from these analyses and how they answer the hypotheses are discussed in detail in the section ‘4.4 Conclusion of the Results Section’.



**Figure 2** Annual means of different migration attitudes

Before the analysis of the data, it is important to better understand the data sample. as the data for this research is individual survey panel data we can observe trends over time. For instance, in Figure 2 a general negative trend of the cultural adaption survey question means that on average the Dutch populous is slightly more accepting of people retaining their own culture over time. Furthermore, the sentiment of economic dependence on immigrants is steadily increasing as well. The perception that there are too many foreigners in the Netherlands has, apart from the year 2020, a consistently increasing trend. Finally, there is no clear discernible trend over time for perceptions of asylum-seeking in the Netherlands apart from a similar discontinuity in the year 2020.

### 4.2 Simple OLS Regression

To answer the aforementioned hypotheses a similar OLS regression was carried out as for the initial step of Dustmann and Preston (2006). Based on this Table 3 shows the results of the OLS regression. In this table, the reference category is a 15- to 24-year-old native-born

Dutch woman without secondary education living in a moderately urban dwelling in the year 2017. Surprisingly almost all variables are statistically significant except for wages. This could perhaps be the case as much of the effect of wages is already explained through other observables such as education, age, and labour market status. Furthermore, the panel confirms the trend observed in Figure 3 as there is a positive trend in migration perception across the panel with later years being statistically more positive about migration. Another notable observation is that students and people generally inactive in the labour market have a significantly more positive association with immigration than those who are active in the labour market. For students, this association is even economically relevant as students are on average 0.251 points more favourable towards migration. This is specifically large considering the dependent variable ranges from one to five. This is also reflected in the level of education attained as a higher level is associated with a statistically, and in the case of university and college graduates economically, significantly more positive perception of migration.

Following the findings of the importance of racial and cultural concerns, the significance of being a first- or second-generation immigrant is specifically interesting (Dustmann and Preston, 2007). It follows that immigrants tend to, even to the second generation, be more positive towards immigration. Non-Western immigrants show this effect significantly more than their Western counterparts. This could, however, be explained if we assume that the most visible migration to the Netherlands is non-western migration. Possible racial and cultural bias might be less strong for non-Western immigrants. Furthermore, exposure to non-western immigration might also explain this phenomenon. As individuals come across something more often in their lives, one such example being immigration, they grow more understanding of the phenomenon. This mechanism is further exemplified by the significance of the urbanity of where an individual lives. After all, in more urban environments individuals have a bigger exposure to individuals with different ethnic and cultural backgrounds.

Other interesting findings were that men are associated with having an economically significantly less positive perception of migration than their female counterparts. Furthermore, only 45- to 54-year-olds have a significantly less positive perception of migration than the reference category of 15- to 24-year-olds.

Finally, the three personal characteristics are all highly significant. Especially trustfulness, which is positively associated with migration attitudes, has a major economic effect. After all, the difference between the most extreme responses is associated with a 0.9 level change in migration attitudes or nearly 20% of the total range of MMA. Empathy is also positively associated with migration perception. This seems to confirm the theorised effect of empathy in previous research (Dinesen et al., 2016). However, the negative association between happiness and migration attitudes did not follow the expected positive relationship from the second hypothesis.

To be able to find the effect of the same observables on different aspects of migration attitudes Table A.1 in Appendix A shows the same segment with MMA segmented into the initial survey questions. While most effects are consistent with the findings for the MMA, there are some differing findings when analysing the answers to the specific aspects. The largest difference is that wages are statistically and economically significant at the one percent level for the perceived importance of immigrants in the Dutch economy and whether asylum-seeking should be made easier. The former, positive, effect could perhaps be explained by an exposure effect. Those with higher levels of income could be more aware of the importance of immigrant workers in certain economic sectors through exposure to these workers. The second, negative, effect seems to be in line with the theory and findings of Dustmann and Preston (2006). Namely, if public debt is a major economic reason through which immigration perceptions are formed, those who contribute more to public income will be less positively inclined towards an increase of public debt. Taking on more asylum seekers is, however, at least initially a net public debt. As such it makes economic sense that there is a correlation between income and attitudes towards extending asylum.

A second interesting finding is that those who did not complete secondary schooling have a more positive view on extending asylum than those who completed or are still undergoing, vmbo (Table A.1 in Appendix A). The negative effect despite further education as compared to primary school is an interesting and unexpected observation to keep in mind for further analysis.

**Table 3** OLS regression of MMA on socio-economic and personal characteristics

Variable	Coefficient	Std. Dev.
<b>Log(Net monthly wages)</b>	0.009	0.018
<b>Year</b>		
2018	-0.013	0.036
2019	-0.039***	0.010
2020	0.058***	0.011
2021	0.100***	0.012
2022	0.038***	0.012
<b>Labour market status</b>		
Unemployed	-0.012	0.056
Inactive	0.047*	0.027
Housework	-0.011	0.039
Student	0.251***	0.049
<b>Education</b>		
vmbo	-0.048	0.038
Havo/vwo	0.154***	0.045
Junior college (mbo)	0.043	0.038
College (hbo)	0.263***	0.039
University (wo)	0.415***	0.045
<b>Foreign background</b>		
Western		
First generation	0.161***	0.046
Second generation	0.159***	0.037
Non-western		
First generation	0.506***	0.041
Second generation	0.340***	0.051
<b>Gender</b>		
Male	-0.122***	0.019
Other	0.858***	0.060
<b>Urban</b>		
Extremely urban	0.105***	0.025
Very urban	0.056***	0.019
Slightly urban	-0.13	0.021
Not urban	-0.034	0.023
<b>Age</b>		
25 – 34	-0.048	0.046
35 – 44	-0.075	0.049
45 – 54	-0.139***	0.048
55 – 64	-0.078	0.048
65 and older	-0.079	0.051
<b>Empathy</b>	0.050***	0.011
<b>Happiness</b>	-0.017***	0.006
<b>Trustfulness</b>	0.090***	0.004
<b>Constant</b>	1.921***	0.143
Sample size		20,152
Clusters		6,729
R <sup>2</sup>		0.197

Note: clustered standard errors clustered using the randomised personal indicator 'nomem\_encr'. \* indicates  $p < 0.1$ ; \*\* indicates  $p < 0.05$ ; \*\*\* indicates  $p < 0.01$ .

### **4.3 Fixed Effects Model**

Having analysed the data using a simple OLS regression it is of interest to also test the specific effects of time-variant characteristics. A lot of the characteristics discussed in the earlier OLS are time-invariant. These variables, such as gender, are impossible to be changed by individuals. As the LISS panel data constitutes panel data it is possible to investigate within-individual time-varying characteristics using a fixed effect model.

However, to know whether a fixed effects (FE) or a random effects (RE) model should be used to estimate the time-varying variables a Durbin-Wu-Hausman test ought to be executed (Table C.1 in Appendix C). This is necessary as fixed effects models assume that individual-specific effects are correlated with the explanatory variables. However, random effects models assume that individual-specific effects are uncorrelated with the explanatory variables and model the individual effects as random effects taken from a common distribution. The Durbin-Wu-Hausman test is used to evaluate the consistency of the FE and RE estimators. Inconsistency implies that the individual-specific effects are correlated with the explanatory variables. Based on the fact that the p-value is significant at the 1% significance level we have to reject the null hypothesis and accept the alternative hypothesis that a random effects model cannot be used. As such, the fixed effects model is used to analyse the within-individual time-varying effects of socio-economic and personal characteristics on MMA.

Using these variables five different models were used to estimate the MMA (Table 4). These models were chosen to see whether there were specific changes that could be observed when omitting certain variables. As such, the effect of age and wage, contrary to the findings of the OLS model, are very statistically significant, most even at the one percent level. The economic effect of wages is larger than those in the previous OLS, after all, a one percentage shift in wage has a 0.029 effect on migration perception rather than a 0.009 shift in the previous model. Meanwhile, empathy, happiness, and trustfulness do not seem to be statistically significant. Furthermore, age categories are consistently significant in this dataset. As net monthly wages tend to rise with age, age categories would be an omitted variable in determining the effect of net wage. In both the first and full model older age groups have a significantly more positive association with migration perception. Furthermore, extremely urban dwelling seems to be negatively correlated with migration perception. This is the opposite of the expected results from theory and observations in previous research (Dustmann and Preston, 2006).

This might seem like an important finding, however, most of the independent variables are relatively unvarying over time. As such, the constructed fixed effects model may be inappropriate for true estimation using this data. Especially given the low r-squared or explanatory power of the five models it is probable that this is the case. As such it is not useful and will not be pursued in the analysis of the hypotheses.

**Table 4** Fixed effects models on the effect of socioeconomic and personal characteristics on MMA

variables	MMA (1)	MMA (2)	MMA (3)	MMA (4)	MMA (5)
<b>Log( net wage)</b>	0.028*** (0.010)	0.042*** (0.012)	0.044*** (0.012)	0.043*** (0.013)	0.029** (0.014)
<b>Labour Status</b>					
Unemployed				-0.004 (0.029)	-0.005 (0.029)
Inactive				0.014 (0.019)	0.021 (0.020)
Housework				0.019 (0.034)	0.024 (0.034)
Student				-0.009 (0.033)	0.020 (0.033)
<b>Urban</b>					
Extremely urban			-0.031* (0.017)	-0.032* (0.017)	-0.033** (0.017)
Very urban			-0.013 (0.011)	-0.013 (0.011)	-0.0136 (0.011)
Slightly urban			0.005 (0.012)	0.006 (0.012)	0.005 (0.012)
Not urban			-0.005 (0.015)	-0.004 (0.015)	-0.004 (0.015)
<b>Age categories</b>					
25 – 34 years	0.164*** (0.025)				0.180*** (0.032)
35 – 44 years	0.281*** (0.0321)				0.287*** (0.040)
45 – 54 years	0.275*** (0.037)				0.269*** (0.047)
55 – 64 years	0.318*** (0.041)				0.304*** (0.051)
65 years and older	0.326*** (0.044)				0.289*** (0.054)
<b>empathy</b>		-0.000 (0.006)	0.000 (0.006)	-0.000 (0.005)	-0.0004 (0.006)
<b>happy</b>		0.007** (0.004)	0.007** (0.004)	0.008** (0.003)	0.008** (0.004)
<b>trustful</b>		0.004* (0.002)	0.004* (0.085)	0.003* (0.002)	0.004* (0.002)
<b>constant</b>	2.268*** (0.074)	2.357*** (0.093)	2.346*** (0.095)	2.350*** (0.107)	2.182*** (0.110)
<b>observations</b>	27,898	20,679	20,574	20,571	20,571
<b>Overall R<sup>2</sup></b>	0.006	0.016	0.006	0.003	0.002
<b>Corr(u<sub>i</sub>, X<sub>b</sub>)</b>	-0.207	0.092	0.030	0.012	-0.160
<b>F-test (prob&gt;F)</b>	0.000	0.000	0.000	0.000	0.000

Note: MMA stands for mean migration attitude. \* indicates  $p < 0.1$ ; \*\* indicates  $p < 0.05$ ; \*\*\* indicates  $p < 0.01$ . The numbers enclosed in brackets are each variable's respective standard errors.

## ***4.4 Conclusion of the Results Section***

To conclude, in the results section of this thesis, an OLS regression and Fixed Effects model were carried out. Over time, there is likely little variability in the data. As such, the Fixed Effects model is deemed unfit for the further analysis of the hypotheses. Contrarily, the findings based on the OLS model did contribute to answering the hypotheses.

First of all, the first hypothesis investigates the validity of the effects found in previous research. The effects of labour market status, education, age, gender, urbanity, and foreign background are similar to those previously found (Dustmann and Preston, 2006). The distinction between Western and non-Western immigrants and Dutch locals seems to confirm the importance of racial and cultural reasons in migration perception (Dustmann and Preston, 2007). Finally, age does not seem to have as large an impact on migration perception as was previously understood. This could indicate that some of the previously understood effects of age on immigration perception (Lancaster, 2022) are explained by other socio-economic or personal characteristics.

The second hypothesis states that empathy, trustfulness, and happiness have a positive effect on migration perception. This is partially correct. Only the last variable, happiness, is not positively correlated with migration perception. All three variables do have economically significant effects; however, the sign of the variable happiness is opposite the expectation. Finally, trustfulness is especially strongly correlated, accounting for a 20% total difference in migration perception.

## ***5. Robustness***

Considering the importance of time in both of the earlier analyses and the trends in the data it is important to assess the normality of the different years used in the regression. After all, if the panel data is significantly skewed during certain years the validity of certain, if not all, coefficients could be questioned.

### ***5.1 RDD accounting for changes during the COVID-19 pandemic***

One such sensitivity of the analysis employed in the results section is the fact that the timeframe 2017 to 2022 includes years during the global COVID-19 pandemic. In March 2020 the Netherlands initiated a national lockdown because of this. As the whole population of the Netherlands was suddenly quarantined at home there might be issues with the generalisability of the data during those years. This is especially important as anti-immigrant sentiments decreased at the beginning of the pandemic according to Muis and Reeskens (2022). One way to investigate this is by running a Regression Discontinuity Design (RDD) to test whether there



is a discontinuity between the trends in the data before and after the treatment. This method of analysis tests for a discontinuity in the trend of immigration perception. If there is a discontinuity this might indicate that perspectives have changed. By analysing the component survey questions of the MMA, we can distinguish whether different aspects of immigration perceptions have been altered by COVID-19 differently. In this specific case, the treatment variable is called covid-19 which is a dummy variable equal to one for observations in the years 2020 to 2022 and zero for observations in the years 2017 to 2019. From this RDD it can be inferred that for all survey questions, the covid-19 pandemic had a statistically significant effect on immigrant attitudes. Only the economic importance of foreigners was less statistically and economically significant than the other variables. All other treatment effects were significant at the 1-percent significance level. These included a positive shift in attitudes towards asylum seekers towards making obtaining asylum easier; a decrease in the level of agreeance with the sentiment that there are too many foreigners; and a shift towards allowing immigrants to retain their own culture. Thus, Dutch people positively shifted their immigration perceptions after the COVID-19 pandemic. There was only a slight decline in the estimated economic importance of immigrants in the Netherlands. This confirms the observations from Figure 2 as there were jumps in the different means of immigration perceptions from 2019 to 2020.

**Table 5** Regression Discontinuity Design of the effect of COVID-19 on immigration perceptions

Variable	Cultural		Economic		General		Asylum	
	Coeff	Std. Dev	Coeff	Std. Dev	Coeff	Std. Dev	Coeff	Std. Dev
Year	-0.019***	0.005	0.095***	0.005	0.060***	0.005	-0.011***	0.004
Covid-19	-0.106***	0.015	-0.030*	0.016	-0.177***	0.015	0.128***	0.014
Constant	45.384***	9.435	-134.380***	9.905	-118.234***	9.722	24.304***	9.037
Sample size	30,976		31,530		31,530		31,530	
Clusters	8,457		8,511		8,511		8,511	
R <sup>2</sup>	0.008		0.011		0.002		0.004	

*Note: clustered standard errors clustered using the randomised personal indicator 'nomem\_encr'. The time period used is from 2017 to 2022. Covid-19 is a binary variable distinguishing between years before (0) and after (1) the outbreak of the COVID-19 pandemic. \* indicates  $p < 0.1$ ; \*\* indicates  $p < 0.05$ ; \*\*\* indicates  $p < 0.01$ .*

As these findings showcase a significant shift in immigration perceptions across the dataset it becomes important to check whether this has affected the different correlations and effects of the original OLS model. To test this I ran the OLS regression for two separate periods (Table 7). The first period only uses data from 2017 to 2019, or the years before the COVID-19 pandemic happened, whereas the second period uses data from 2020 to 2022. This data was consequently merged with the following analysis in one table. From this, we can infer that all

significant correlations between the dependent variable of migration attitudes and socio-economic and personal relations remained the same. The shift visible in the RDD (Table 5) is also visible in the shift in the magnitude of the constant. The only difference between both regressions is the change in statistical significance of the different age categories. For the second period age categories are significantly correlated with immigration attitudes as opposed to the first period. This could be due to the change in statistical significance coinciding with a change in the amount of observations. Regardless of the reason, the consistency of the correlations between personal and socio-economic characteristics and migration perception indicates that the COVID-19 pandemic only shifted migration perception. After all, the specific correlations between variables and migration attitudes have remained nearly identical.

## ***5.2 Using PVV and Geert Wilders as indicators with responses as variables.***

Another way in which we can check for the robustness of the analysis employed is by questioning the artificially constructed migration attitudes variable. A way in which this can be done is by using political opinion polling of the PVV (Partij Voor de Vrijheid) and Geert Wilders as a proxy variable of immigration perceptions. To contextualise, the PVV is a Dutch political party which runs on an anti-migration platform. In the 2023 general elections, the PVV became the biggest political party under party leader Geert Wilders (Kiesraad, 2023). Even though data from 2023 is not yet included in the dataset, every year opinion polling on Geert Wilders and the PVV was conducted. During this time the PVV never changed their anti-migration platform which makes sympathy towards the political party a good proxy variable for migration attitudes. This is best exemplified by the simple correlation table detailing the correlation between PVV, Geert Wilders and migration attitudes (Table 6). In the dataset, PVV opinion is measured by measuring the answers to the question “*What do you think of the PVV (Wilders freedom party)?*” with answers ranging from “0 – very unsympathetic” to “10 – very sympathetic”. The same range of answers was used for opinion polling on Geert Wilders which responded to: “*What do you think of Geert Wilders?*”. Perhaps employing less direct questioning could help construct a more accurate view of how individuals truly feel about migration. After all, answers to “there are too many foreigners in the Netherlands” could be slightly more moderate than answers to sympathies towards a political party or politician.

Based on this we can infer that the -0.499 and -0.482 correlations of migration attitudes with attitudes on the PVV and Wilders respectively signify that there is an almost perfectly negative correlation between both variables. We can infer this as migration opinion is measured on a scale from 1 to 5 rather than the 0 to 10 scale used for PVV opinion and Wilders opinion. As such an increase in migration attitudes by one level is correlated with a decrease

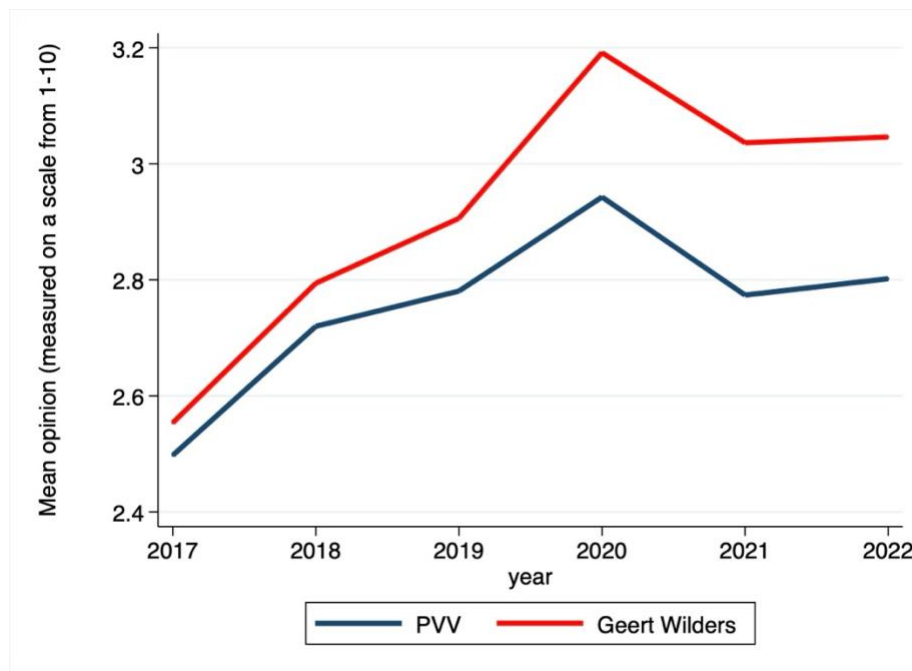
in sympathy towards the PVV of two levels. The strength of this correlation indicates that these variables might be fitting variables to test the established correlations.

**Table 6** Correlations between individuals' attitudes towards the PVV, Geert Wilders and Migration.

	PVV opinion	Wilders opinion	MMA
PVV opinion	1.000		
Wilders opinion	0.869	1.000	
MMA	-0.499	-0.482	1.000

To see whether the trends over time of this variable vary similarly to those of migration attitudes I constructed a graph to showcase this (Figure 3). In this figure two interesting things are important to note:

First of all, the mean public perception of the PVV and Geert Wilders is increasing over time. Considering the previously found positive trends in migration attitudes, this trend only seems to coincide with general discontent towards the amount of foreigners in the Netherlands. Secondly, the means of both variables are very low considering the means of MMA and the fact that the means do not surpass 3.2 on a 1 to 10 scale.



**Figure 3** Mean opinions on the PVV (Party for Freedom) and Geert Wilders in 2017-2022

Based on this data, the same OLS regression as was carried out in Table 3 was used for Table 7 with the PVV and Geert Wilders as dependent variables. Important to note is that opinions on PVV and Wilders mirror migration attitudes as they are negatively correlated. Practically all previously described findings for the relationship between socio-economic and personal characteristics and migration attitudes are mirrored for attitudes towards the PVV

and Geert Wilders. Surprisingly, this does not hold for first-generation Western immigrants who are associated with having a significantly more positive opinion of the PVV at the one percent level. Furthermore, these proxy variables do indicate a significant effect of wage which is either a shortcoming of the original OLS regression or the control dependent variables.

Whichever case, the overall effects in the OLS regression hold up to the three different robustness checks. Only minor differences have to be accounted for such as the differences observed for wages, junior college (mbo), and first-generation Western immigrants. Apart from these three changes, the data remained relatively significant and similar to the original OLS regression. This does confirm the strength of the dependent variable and timeframe of the main OLS regression.

**Table 7** OLS regression of MMA, and opinions of PVV and Geert Wilders on socio-economic and personal characteristics

Variable	2017-2019 only MMA		2020-2022		PVV		Geert Wilders	
	Coeff	std. dev.	Coeff	std. dev.	Coeff	std. dev.	Coeff	std. dev.
<b>Log(Net monthly wages)</b>								
<b>Year</b>								
2018	-0.003	0.036			-0.021	0.146	0.147	0.143
2019	-0.042***	0.010			0.321***	0.040	0.409***	0.039
2020					0.538***	0.042	0.763***	0.041
2021			0.043***	0.009	0.336***	0.045	0.570***	0.044
2022			-0.018*	0.010	0.405***	0.046	0.603***	0.046
<b>Labour market status</b>								
Unemployed	-0.007	0.063	-0.020	0.078	0.231	0.205	0.146	0.205
Inactive	0.033	0.032	0.052*	0.031	-0.108	0.108	-0.045	0.109
Housework	-0.007	0.046	-0.016	0.043	-0.073	0.165	0.062	0.162
Student	0.316***	0.066	0.210***	0.063	-0.598***	0.182	-0.677***	0.167
<b>Education</b>								
vmbo	-0.025	0.043	-0.065	0.043	-0.117	0.184	-0.115	0.185
Havo/vwo	0.182***	0.051	0.135***	0.049	-0.886***	0.197	-0.773***	0.197
Junior college (mbo)	0.051	0.044	0.040	0.043	-0.411**	0.181	-0.359**	0.183
College (hbo)	0.280***	0.044	0.252***	0.044	-1.290***	0.178	-1.155***	0.181
University (wo)	0.451***	0.050	0.393***	0.050	-1.901***	0.187	-1.709***	0.191
<b>Foreign background</b>								
Western								
First generation	0.121**	0.050	0.186***	0.049	0.449**	0.197	0.214	0.195
Second generation	0.147***	0.040	0.165***	0.040	-0.053	0.140	0.007	0.138
Non-western								
First generation	0.548***	0.048	0.483***	0.045	-0.513***	0.188	-0.741***	0.182
Second generation	0.340***	0.062	0.338***	0.058	-0.732***	0.199	-0.947***	0.200
<b>Gender</b>								
Male	-0.120***	0.021	-0.124***	0.020	0.436***	0.070	0.519***	0.071
Other <sup>1</sup>			0.808***	0.070	-0.634	1.434	0.387	2.069
<b>Urban</b>								
Extremely urban	0.077***	0.029	0.122***	0.028	-0.262***	0.094	-0.192**	0.096
Very urban	0.063***	0.023	0.052**	0.023	-0.142*	0.076	-0.117	0.077
Slightly urban	-0.020	0.024	-0.008	0.025	-0.021	0.083	-0.038	0.083
Not urban	-0.029	0.026	-0.036	0.026	-0.075	0.091	-0.078	0.091
<b>Age</b>								
25 – 34	0.011	0.059	-0.087	0.058	0.094	0.168	0.206	0.158
35 – 44	0.014	0.062	-0.134**	0.060	0.027	0.180	0.247	0.172
45 – 54	-0.019	0.061	-0.218***	0.059	-0.123	0.179	0.070	0.171
55 – 64	0.067	0.061	-0.175***	0.059	-0.509***	0.177	-0.246	0.169
65 and older	0.062	0.065	-0.168***	0.063	-0.816***	0.193	-0.463**	0.186
<b>Empathy</b>	0.048***	0.013	0.050***	0.012	-0.161***	0.040	-0.120***	0.040
<b>Happiness</b>	-0.019**	0.008	-0.015**	0.007	0.067***	0.025	0.082***	0.024
<b>Trustfulness</b>	0.085***	0.005	0.093***	0.004	-0.228***	0.016	-0.205***	0.016
<b>Constant</b>	1.814***	0.170	2.063***	0.161	6.405***	0.540	5.194***	0.545
Sample size	8,017		12,107		19,256		19,783	
Clusters	4,804		5,535		6,551		6,708	
R <sup>2</sup>	0.182		0.203		0.134		0.113	

Note: No observations for 'other' gender were recorded in 2017-2019. clustered standard errors clustered using the randomised personal indicator 'nomem\_encr'. \* indicates  $p < 0.1$ ; \*\* indicates  $p < 0.05$ ; \*\*\* indicates  $p < 0.01$ .

## **6. Discussion**

The purpose of this thesis was two-fold. Firstly, this research has sought to investigate the effect of wage; labour market status; education; gender; urbanity; age and a foreign background on migration perception. Secondly, the expected positive correlations of happiness, trustfulness and empathy on immigration perceptions were investigated.

For the first hypothesis, the data seems to suggest significant positive effects of foreign background; education; and living in an urban environment on migration perception. This is similar to previous research which found that people find similarity in ethnic or racial profiles important in the decision for further migration (Dustmann and Preston, 2007). This makes economic sense as coming from a foreign background and living in an urban environment gives individuals more exposure to immigration. Generally speaking people who are more familiar with immigration and immigrants are expected to have a better opinion of immigration. As for the effect of education, it could be that this effect is partially explained by the relative labour market security highly educated workers enjoy. This is strengthened by the fact that only 28% of non-EU immigration is high educated (Ministerie van Justitie en Veiligheid, 2024). Aside, a higher level of education is claimed to lead to a higher level of tolerance (Paas and Halapuu, 2007). This would be akin to the findings of Card and Preston (2006). Similarly, this applies to the effects of labour market status, gender, and urbanity. More specifically, highly significant positive effects of being a student, highly significant negative correlations for males and highly significant positive effects of having an urban dwelling on immigration perception. The latter effect is best explained by the larger exposure to immigration found in urban environments. The observed gender discrepancies in immigration perception seem to match a political inclination for men to be more conservative than their female counterparts. Meanwhile, the opposite effect found for people answering 'Other' could be explained by the prevalence of LGBTQ+ individuals to be more socially liberal than the societal average. This does indicate a need for a comprehensive academic understanding of gender identity on political inclination. Furthermore, these findings imply that the effects have remained unchanged since the 2001 ESS survey. Unexpectedly, however, mbo and vmbo education appeared to have a weaker positive or even negative correlation with migration perception. It is unclear why this is precisely the case. One reason could be that the labour market is slightly more important for vmbo and mbo graduates than primary school as there is more competition with immigrants in their respective fields of work.

For the second hypothesis, empathy and trustfulness were found to have a significant positive effect on migration perceptions. Previous research on the Big Five personality already predicted this correlation. This is because both impact the personality trait agreeableness. Agreeableness, in turn, was found to have a significant effect on migration perceptions (Vecchione et al., 2012; Dinesen et al., 2016). However, contrary to previous research (Panno,

2022) happiness was not positively correlated with migration perception. This might be because this research used life happiness rather than happiness at the moment as the investigated variable. As such, people that are more content with their own life might find it more difficult to understand the reasons to migrate. Otherwise, it could be possible that happier individuals work in industries that are more affected by competition with migrants. Finally it is possible that there is a separate characteristic that influences both variables separately.

Even outside of the hypotheses, unexpected or otherwise interesting correlations were found that might be important to investigate in future research. One of these is the confirmation of the finding that in the early years of the COVID-19 anti-migration sentiments decreased (Muis and Reeskens, 2022). Previous research used linear regressions for 2017 and 2022 to estimate the importance of COVID-19. The RDD method approached by this research is a significant improvement as it shows the change in immigration attitudes within a year before and after the start of the pandemic. This might indicate that changing priorities and emphasis in societal discourse improve immigration attitudes.

One major limitation of this research is the fact that only the Netherlands is investigated, this makes the external validity outside of the Netherlands hard to prove. Additionally, the utilised dataset can only identify short-term trends as only six years were used. Ideally, a longer period is chosen for a fixed effects regression with personal characteristics. After all, it is likely that changes in personality are not as variable over time as net income or other economic observables.

Nonetheless, one strength of this research is the reliability of the data. This allows for the conclusions to be extrapolated to a wider Dutch population. Furthermore, the similar findings found by linear regressions in the robustness section with an altered timeframe and dependent variables strengthen the findings of the initial OLS regression (Table 3).

These findings have multiple implications for policymakers. First of all, to improve immigration perception, the share of high-skilled immigration ought to increase if increasing the share of university educated native is unfeasible. Additionally, changing the political emphasis away can improve immigration perceptions. Finally, if the goal of policymakers is to improve the efficiency of integration through improved immigration perceptions, it is vital to instil a sense of trust in immigration and immigrants. This could best be done by further exposure of the general populous to immigration in their daily lives.

## ***7. Conclusion***

To conclude, migration attitudes are influenced by a myriad of socio-economic and personal characteristics. This was established utilising an OLS model as the additional fixed effects model was inappropriate given the analysed data. As such, the two hypotheses have

been answered. The first hypothesis was largely correct as previous correlations between socioeconomic characteristics and migration attitudes were consistent with earlier findings (Dustmann and Preston, 2006). However, the effects of age groups was different from those found in earlier research (Lancaster, 2022). The second hypothesis was partially correct as trustfulness and empathy are positively correlated with migration perception. However, the effect of happiness on migration perception was found to be negative rather than positive.

While the specific underlying mechanisms have not been identified in this research multiple surprising findings have been discovered. Firstly, future research could investigate why vmbo and mbo graduates, the most practical levels of the Dutch education system, are associated with more negative perceptions of immigration, specifically asylum-seeking, than those who did not complete secondary education. Secondly, the difference between previous findings and the ones in this paper on the sign of the effect of happiness on migration perception ought to be investigated (Panno, 2022). After all, either happiness and life happiness do not equate in the setting of immigration perception, or the effect of happiness differs based on the research setting. Either way, revisiting this variable could provide valuable insight. Finally, future research might want to expand the limited scope of the countries investigated in immigration research. Only the richest countries in the world get analysed and usually, the scope of investigation is contained to Europe or the United States of America. As such, it could be beneficial to have a more in-depth understanding of whether common relations between migration perception and socio-economic characteristics also hold outside of these regions of the world.



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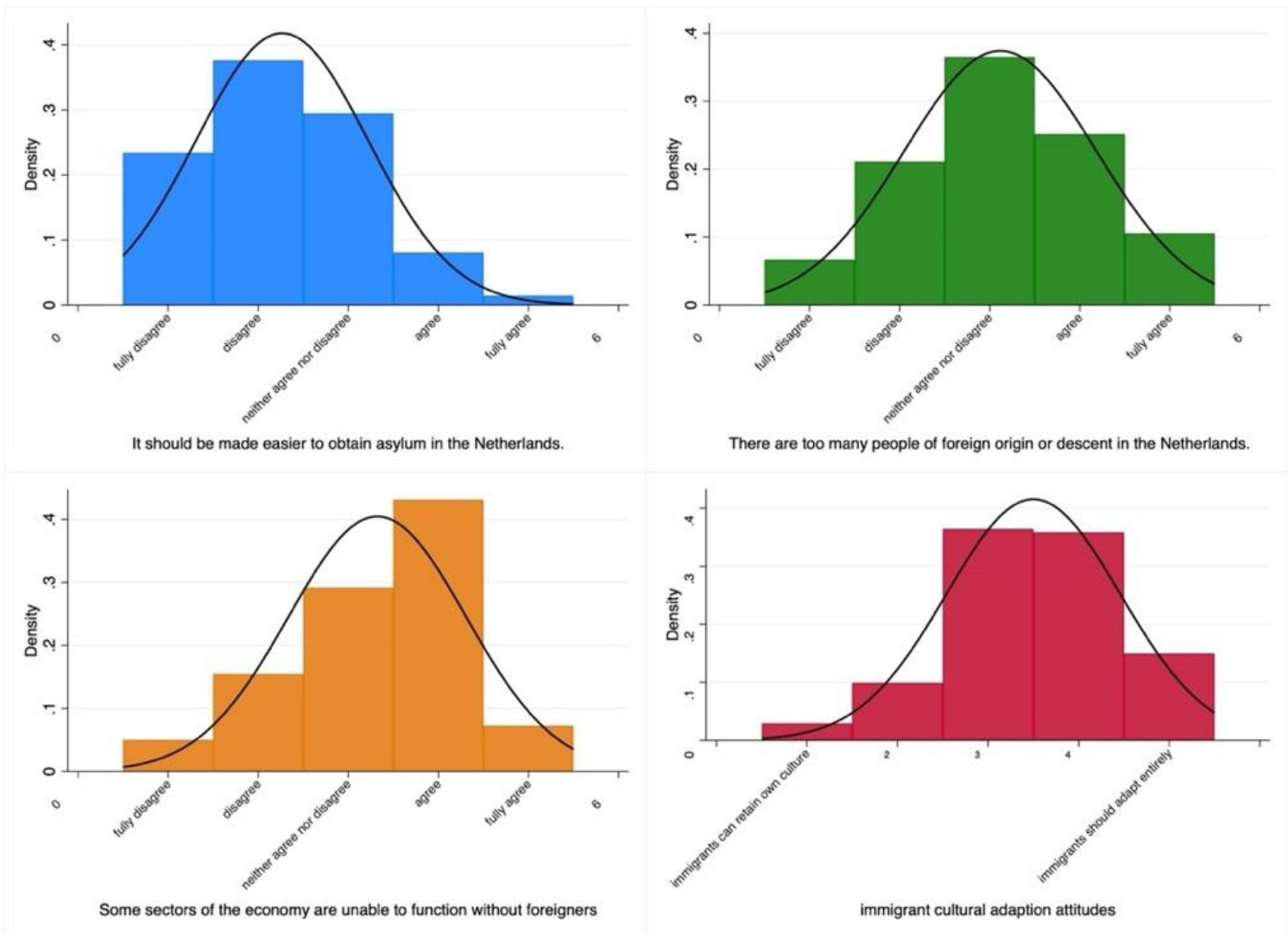
# Appendix A

**Table A.1** Regressions of Socio-economic and personal characteristics on Immigration perceptions

Variable	Cultural		Economic		General		Asylum	
	Coeff	std. dev.	Coeff	std. dev.	Coeff	std. dev.	Coeff	std. dev.
<b>Log(Net monthly wages)</b>	-0.017	0.021	0.066***	0.022	-0.022	0.024	-0.069***	0.022
<b>Year</b>								
2018	-0.005	0.049	0.049	0.052	0.070	0.053	-0.065	0.046
2019	0.011	0.015	0.146***	0.017	0.140***	0.016	-0.158***	0.015
2020	-0.101***	0.016	0.158***	0.017	0.031*	0.016	-0.002	0.015
2021	-0.159***	0.017	0.268***	0.018	0.055***	0.018	0.024	0.016
2022	-0.169***	0.017	0.266***	0.018	0.162***	0.018	-0.120***	0.017
<b>Labour market status</b>								
Unemployed	-0.016	0.065	-0.107	0.076	-0.024	0.078	0.016	0.067
Inactive	-0.080**	0.034	0.030	0.035	-0.035	0.038	0.051	0.035
Housework	-0.009	0.050	0.024	0.053	0.060	0.052	-0.016	0.049
Student	-0.231***	0.069	0.205***	0.067	-0.369***	0.072	0.204***	0.067
<b>Education</b>								
vmbo	-0.053	0.054	0.022	0.050	0.090*	0.051	-0.166***	0.045
Havo/vwo	-0.239***	0.061	0.221***	0.057	-0.205***	0.060	-0.074	0.052
Junior college (mbo)	-0.174***	0.055	0.106**	0.050	-0.045	0.051	-0.146***	0.045
College (hbo)	-0.343***	0.055	0.289***	0.050	-0.365***	0.053	0.057	0.047
University (wo)	-0.459***	0.060	0.414***	0.055	-0.574***	0.061	0.215***	0.053
<b>Foreign background</b>								
<b>Western</b>								
First generation	-0.056	0.052	0.198***	0.054	-0.171***	0.062	0.216***	0.062
Second generation	-0.149***	0.046	0.126***	0.042	-0.220***	0.051	0.138***	0.045
<b>Non-western</b>								
First generation	-0.561***	0.065	0.313***	0.051	-0.421***	0.058	0.699***	0.052
Second generation	-0.512***	0.073	0.135**	0.066	-0.427***	0.072	0.279***	0.060
<b>Gender</b>								
Male	0.130***	0.023	-0.100***	0.023	0.113***	0.026	-0.144***	0.023
Other	-0.191**	0.077	0.560***	0.078	-1.090***	0.084	1.560***	0.074
<b>Urban</b>								
Extremely urban	-0.125***	0.031	0.051**	0.031	-0.144***	0.034	0.094***	0.031
Very urban	-0.083***	0.025	0.029	0.025	-0.060**	0.028	0.045*	0.025
Slightly urban	0.030	0.026	-0.008	0.027	0.004	0.030	-0.016	0.027
Not urban	0.048*	0.028	-0.053*	0.029	-0.009	0.032	-0.043	0.029
<b>Age</b>								
25 – 34	0.063	0.063	0.004	0.064	0.050	0.068	-0.106*	0.059
35 – 44	0.061	0.066	-0.036	0.068	0.103	0.071	-0.120*	0.063
45 – 54	0.161**	0.065	-0.052	0.067	0.141**	0.070	-0.218***	0.061
55 – 64	0.163**	0.065	0.021	0.066	0.089	0.070	-0.097	0.061
65 and older	0.228***	0.069	0.047	0.071	0.123*	0.074	-0.044	0.066
<b>Empathy</b>	-0.064***	0.013	0.017	0.013	-0.061***	0.015	0.056***	0.013
<b>Happiness</b>	0.024***	0.008	-0.007	0.008	0.007	0.008	-0.028***	0.007
<b>Trustfulness</b>	-0.084***	0.005	0.069***	0.005	-0.117***	0.005	0.088***	0.005
<b>Constant</b>	4.418***	0.173	2.064***	0.180	4.269***	0.194	2.362***	0.176
Sample size	20,152		20,432		20,432		20,432	
Clusters	6,737		6,781		6,781		6,781	
R <sup>2</sup>	0.128		0.082		0.162		0.124	

Note: clustered standard errors clustered using the randomised personal indicator 'nomem\_encr'. \* indicates  $p < 0.1$ ; \*\* indicates  $p < 0.05$ ; \*\*\* indicates  $p < 0.01$

## Appendix B



**Figure B.1** Distributional graphs with normal distribution for 4 survey questions

## Appendix C

**Table C.1** Hausman test

	Fixed effect (b)	Random effect (B)	Squared standard error
Log(Net monthly income)	0.0295	0.059	0.009
<b>Labour Status</b>			
2	-0.005	0.005	0.009
3	0.021	0.014	0.011
4	0.024	-0.001	0.021
5	0.020	0.171	0.016
<b>Age categories</b>			
3	0.180	0.042	0.017
4	0.287	0.015	0.027
5	0.269	-0.087	0.035
6	0.304	-0.080	0.040
7	0.289	-0.092	0.043
<b>Urban</b>			
1	-0.033	0.071	0.009
2	-0.014	0.025	0.004
4	0.005	-0.013	0.004
5	-0.004	-0.041	0.007
Empathy	-0.000	0.025	0.002
Happy	0.008	0.002	0.001
Trustful	0.004	0.031	0.001
<b>Test of H<sub>0</sub></b>	$\chi^2 = 1050.03$	p-value = 0.000	

Note: Fixed effects: Consistent under H<sub>0</sub> and H<sub>a</sub>; Random effect inconsistent under H<sub>a</sub>, efficient under H<sub>0</sub>.