Life (Dis)satisfaction and Decision to Migrate: Evidence from Central and Eastern Europe*

Olga Popova† and Vladimir Otrachshenko‡

†CERGE-EI ‡Nova School of Business and Economics

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Abstract

In this paper we analyze the effects of life satisfaction on individual migration decision in Central Eastern and Western European countries. Country level variables and socio-economic characteristics are allowed for affecting the individual hypothetical migration decision in one framework not only directly but also through life satisfaction. Using the cross-sectional country estimation, the empirical findings indicate that dissatisfied with life individual have higher intentions to migrate. Moreover, we find that individual socio-economic variables affect migration decisions in CEE and non-CEE countries differently. Also, we find that that economic and political conditions are important and do affect the intention to migrate. The results suggest that improvements in economic and political conditions in CEE countries may not bring to the same level of migration intentions as in non-CEE countries.

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†Email: Olga.Popova@cerge-ei.cz. CERGE-EI is a joint workplace of the Center for Economic Research and Graduate Education, Charles University, Prague, and the Economics Institute of the Academy of Sciences of the Czech Republic. Address: CERGE-EI, P.O. Box 882, Politickych veznu 7, Prague 1, 111 21, Czech Republic.

‡Email: vladotr@fe.unl.pt. Address: Nova School of Business and Economics, Nova University of Lisbon, Campus de Campolide, 1099-032 Lisbon, Portugal.

1 Introduction

It is commonly agreed that migration substantially affects social and economic development of home countries as well as host ones. The factors driving individual migration decision are widely explored in the literature. From the economic perspective, there are two types of factors that have an impact on individual migration decision. The first type is related to the micro level (individual based), such as job and educational opportunities, expected income, health quality and/or better provision of social benefits, relative deprivation.[1] The second type is attributed to the macro level, political and economic conditions of a country, such as war and revolution, taxation policy, quality of governance, and public goods provision, income inequality.[2]

However, in empirical applications, it may be difficult to consider all the factors that may affect the decision process. As highlighted by Stark [37], an individual may still decide to migrate even in case of miserable economic differences and earning differentials between home and host countries. It may be the case that some individual characteristics are observed, such as age, occupation, etc., while others are not, such as tastes and culture. In this case the life satisfaction measure may be used. In particular, by considering the answer to questions regarding life satisfaction, where individuals evaluate the overall quality of their own life.

As pointed out by Lyubomirsky et al.[33] and De Neve et al. [15], life satisfaction is explained by different factors, some of which are observable, while others are unobservable to the researcher. Examples of observable factors are intentional activities, previous experiences, and non-genetic factors, while for unobservable factors one may consider genetics, hidden reasons and motives, for instance, a feeling of deserving a better life, feeling of fairness, etc.

In the literature, only a few studies have investigated the effects of life satisfaction

[1] See Berger & Blomquist [6], De Jong et al. [13], Gibson & McKenzie [21], Kennan & Walker [30], Stark & Bloom [39], Stark & Taylor [40], Stark & Wang [41], among others.

[2] See Alesina & Zhuravskaya [4], Greenwood [23], Stark [38], Tiebout [43], among others.

on individual decisions and activities. Some examples of such studies are Antecol & Cobb-Clark [5], Clark [12], Freeman [18], among others, who use job satisfaction as a predictor of future job quits; Lyubomirsky et al. [32] who suggest that satisfied with life people are likely to be more successful and socially active; Frey & Stutzer [20] who argue that satisfied with life people are more likely to decide to get married; and Guven et al. [24] who examine the effect of gap in happiness between spouses on the probability to divorce.

In this paper we analyze the effects of life satisfaction on individual intention to migrate (hereafter, migration decision) for several Western and Central Eastern European countries in the period of 2008.[3] We distinguish three types of leaves: internal, temporary international, and permanent international leaves (hereafter, permanent migration). Of particular interest is the impact of life satisfaction on the permanent migration decision. In order to explain the permanent migration, we combine individual and country level variables that may affect migration decision. Individual variables are socio-economic characteristics, such as age, income, education, while country level variables are unemployment, GDP per capita, quality of governance. Country level variables and socio-economic characteristics are allowed for affecting individual migration decision not only directly but also through life satisfaction. We analyze the impact of individual characteristics and country macroeconomic variables on decision to migrate in one framework.[4]

We also take into account that migration decisions and life satisfaction of people from Central and Eastern Europe (CEE) may differ from the ones in other European countries in the analysis. According to World Values Survey and recent research, for instance, Hayo [27], Guriev & Zhuravskaya [25] and Easterlin [16], people from transition countries, including CEE, report lower levels of life satisfaction. Therefore,

[3] Centaral and Eastern European countries in our sample are Bulgaria, Czech Republic, Estonia, Hungary, Latvia, Lithuania, Poland, Romania, Slovakia and Slovenia. Western European countries are Austria, Belgium, Cyprus (Republic), Denmark, Finland, France, Germany, Greece, Ireland, Italy, Luxembourg, Malta, Netherlands, Portugal, Spain, Sweden, and United Kingdom.

[4] Alternatively, a two-level modeling approach can be used (see Raudenbush and Bryk [34]). Recent application of this approach on migration has been done by Chi and Voss [11]. However, due to the identification issue of the model we apply the sequantially estimation.

it may be the case that life (dis)satisfaction will have a stronger influence on decision to migrate in Central and Eastern Europe countries than in Western European countries.

The empirical findings indicate that dissatisfied with life people intend to migrate. The results hold for all types of leaves: internal, temporary international, and permanent international. We find that individual socio-economic variables, namely age, education, marital status, and income affect migration decision directly as well as indirectly through life satisfaction. While the macroeconomic variables, such as GDP per capita, unemployment rate, and political variables do not affect migration decision directly, these variables do affect migration decision indirectly through life satisfaction. We also find considerable differences in migration decisions in the CEE and Western Europe. For instance, the non-CEE individuals are intended to migrate less than the CEE individuals at each level of income and education, while the unemployed from urban areas are likely to migrate more from the CEE countries. The main policy implication of our study is that increases in individual well-being as a result of improvements in economic and political conditions may lead to lower migration intentions. However, the improvements in economic conditions in CEE countries may not bring to the same level of migration intentions as in non-CEE countries.

The rest of the paper is organized as follows. The next section briefly reviews the relevant literature, as well as some potential issues regarding the use of subjective data. Then we present our econometric model, describe data and discuss estimation results. The final section concludes.

2 Life Satisfaction and Migration Decision

The relationship between migration and life satisfaction is not yet widely examined in economic literature. Existing studies mostly focus on life satisfaction of actual migrants and their generations. For instance, De Jong et al. [14] study the life

satisfaction of migrants in Thailand before and after migration and argue that it is not increasing, or even decreasing, after moving to a different place, while Easterlin & Zimmerman [17] argue that migrants from Eastern to Western Germany are relatively less satisfied than the locals living in the Western part. Also, Safi [35] suggests that the dissatisfaction of immigrants in Europe, as compared to natives, is not mitigated even across generations. Another papers on migration by Blanchflower et al. [7] and Blanchflower & Shadforth [8] analyze the migration flows from Central and Eastern Europe to the UK and find that the number of migrants is higher from the countries in which GDP per capita and average life satisfaction are lower.

In labor economics, the use of job satisfaction in relation to labor mobility received substantial attention. Most studies in this stream of literature argue that job dissatisfaction is a predictor of job quit intentions as well as actual quits (see Antecol & Cobb-Clark [5], Bockerman & Ilmakunnas [9], Clark [12], Freeman [18], Shields & Ward [36], Stevens [42], among others). In this research we introduce life satisfaction as a predictor of intended migration. For this purpose it is useful to review existing literature on job satisfaction and labor mobility.

In a seminal study Freeman [18] argues that the usefulness of satisfaction data for studying labor mobility is underestimated in economic literature. The author suggests that satisfaction may be used for the evaluation of indirect effects of observed variables as well as a proxy for unobserved objective factors. For instance, job satisfaction may serve as an indicator of workplace quality or mode of supervision. Clark [12] argues that different job satisfaction domains, for instance, satisfaction with career opportunities, relations with supervisors, use of initiative, reflect unobservable job quality characteristics that can be used to measure the probability of job quits. Using data from BHPS, the author finds that dissatisfaction with pay, working hours, work itself, job security, and the use of initiative are significant predictors of future actual job quits. Bockerman & Ilmakunnas [9] analyze Finnish data and argue that job dissatisfaction as a proxy for adverse working conditions

induces quit intentions and actual job quits. The topic of job satisfaction and quits in different industries is developed further by Antecol & Cobb-Clark [5] for military servants, Shields & Ward [36] for nurses, and by Stevens [42] for academicians. All these studies underline the role of dissatisfaction in labor mobility and provide a rationale for studying the implications of dissatisfaction and migration intentions.

Previous findings in the literature suggest that individual intentions predict actual decisions and behavior.[5] The support for this argument is given primarily by the psychological theories of reasoned action and planned behavior suggested by Ajzen & Fishbein [2] and developed by Ajzen [1] and Hale & Householder [26]. As these theories imply, better incorporation of individual (e.g., information, abilities, and emotions) and external (e.g., opportunity costs and external barriers for performing a behavior) factors into the model of hypothetical decision reduces the gap in explaining intended and actual behavior. Moreover, data on individual intentions instead of actual labor mobility are also used in some economic studies (see Antecol & Cobb-Clark [5], Kristensen & Westergerd-Nielsen [31], Shields & Ward [36], among others).

Empirical evidence in favor of strong link between hypothetical and actual migration decision was provided by Gordon & Molho [22] and Boheim & Taylor [10]. Gordon & Molho [22] conclude that in the UK a high share of people who intend to migrate actually moves within five years. Furthermore, Boheim & Taylor [10] argue that the actual probability to move for potential migrants is three times higher than for those who do not intend to move.

Another potential concern is the reliability of subjective data. As summarized by Frey & Stutzer [19] from economic, sociological, and psychological literature, life satisfaction data are valid, consistent and reliable measures of individual well-being, that is people are able to evaluate own quality of life without systematic errors.

[5] See Ajzen and Fishbein [3] for an extensive review of psychological literature on intentions and actual behavior

3 Methodology

3.1 Theoretical Framework

We develop the theoretical framework using the approach suggested by Stevens [42] for job satisfaction and quits in academia. From the theoretical background individual decision to migrate is based on the utility maximization setup. Conventionally, utility, $u(\mathbf{X_{ic}}, \mathbf{C_c})$, depends on individual i characteristics $\mathbf{X_{ic}}$, such as age, gender, income, marital status, etc. Also, it depends on home country c characteristics $\mathbf{C_c}$. In particular, these characteristics are the level of GDP, unemployment, income inequality, government effectiveness, etc.

An individual i decides to migrate from country c to country d if the expected utility from living in destination country d is higher than in home country c.

$$E[u_d(\mathbf{X_{id}}, \mathbf{C_d})] - q > u_c(\mathbf{X_{ic}}, \mathbf{C_c}),$$

where q may be the psychological and material costs of migration.

Then, the probability that individual i decides to migrate from country c can be written as follows:

$$\begin{aligned}
\Pr(MigrDecision_{ic} &= 1|\mathbf{X_{ic}}, \mathbf{C_c}, \mathbf{X_{id}}, \mathbf{C_d}) = \\
&= \Pr\{E[u_d(\mathbf{X_{id}}, \mathbf{C_d})] - q - u_c(\mathbf{X_{ic}}, \mathbf{C_c}) > 0|\mathbf{X_{ic}}, \mathbf{C_c}, \mathbf{X_{id}}, \mathbf{C_d}\} = \\
&= f\{-u_c(\mathbf{X_{ic}}, \mathbf{C_c}) + E[u_d(\mathbf{X_{id}}, \mathbf{C_d})] - q\}
\end{aligned}$$

Thus, the probability of hypothetical decision to migrate from country c to country d negatively depends on utility from living in country c. Consistently with the previous happiness literature, life satisfaction in this paper is used to represent the current level of utility of individual i in country c, $u_c(\mathbf{X_{ic}}, \mathbf{C_c})$. Since the expected utility in destination country, $E[u_d(\mathbf{X_{id}}, \mathbf{C_d})]$, and migration costs q are difficult to evaluate, without the loss of generality we assume that the difference between $E[u_d(\mathbf{X_{id}}, \mathbf{C_d})]$

and q is constant. That is, the net expected value among all individuals who intend to migrate is the same in a particular country. This assumption may be relaxed in future research, but the intuition behind the suggested theoretical mechanism remains similar.

3.2 Econometric Model

In our empirical specification we follow a two-level hierarchical model with random intercepts as described by Raudenbush & Bryk [34] with only one distinction. Due to the identification issue of the model,we estimate levels, namely within and between, sequentially. The results of both models are similar with only difference in the efficiency of estimators. But the discussion about efficiency of estimators is out scope of this paper. This type of analysis allows to relate and structure the characteristics of individuals and groups in one framework. In our paper, clusters are associated with countries, therefore, random intercepts represent the average country specific life satisfaction and propensity to migrate.

Figure 1 in appendix illustrates a two-level regression analysis with random intercepts. As can be seen from this figure, there are two levels, namely, between (country) and within (individual) levels. At between level in the rectangle, country political and economic variables, such as GDP per capita, unemployment, inequality and others, are included. At within level in the rectangles appear individual variables, such as individual socio-economic characteristics and the variable that represents the individual migration decision.

The econometric model can be expressed as follows: equations 1a and 1b1-1b3 are attributed to within level, while equations 2a and 2b1-2b3 represent between level.

$$\begin{aligned}
\text{Prob}(MigrDecision_{ic}^{K} &= 1) = F(\theta_c^K + \beta_1^K LifeSat2_{ic} + \beta_2^K LifeSat3_{ic} + \beta_3^K LifeSat4_{ic} + \quad (1a)\\
&\quad + \beta_4^K Econd_{ic} + \boldsymbol{\eta}^{\mathbf{K}}\mathbf{X_{ic}} + \boldsymbol{\theta}_{\mathbf{c}}^{\mathbf{K}}\mathbf{CD}_c + \varepsilon_{ic}^K)\\
LifeSatJ_{ic}^{*} &= \lambda_c^J + \boldsymbol{\mu}^{\mathbf{J}}\mathbf{X_{ic}} + \boldsymbol{\lambda}_{\mathbf{c}}^{\mathbf{J}}\mathbf{CD}_c + \epsilon_{ic}^J,\ J = 2,3,4 \quad (1b1\text{-}1b3)\\
\theta_c^P &= \gamma_{00}^P + \boldsymbol{\gamma}_{\mathbf{01}}^{\mathbf{P}}\mathbf{Politics_c} + \boldsymbol{\gamma}_{\mathbf{02}}^{\mathbf{P}}\mathbf{Economics_c} + \gamma_{03}^P CEE_c + u_{0c}^P \quad (2a)\\
\lambda_c^J &= \pi_{00}^J + \boldsymbol{\pi}_{\mathbf{01}}^{\mathbf{J}}\mathbf{Politics_c} + \boldsymbol{\pi}_{\mathbf{02}}^{\mathbf{J}}\mathbf{Economics_c} + \pi_{03}^J CEE_c + \zeta_{0c}^J \quad (2b1\text{-}2b3)
\end{aligned}$$

where subscript i stands for individual and subscript c stands for country. The variable $MigrDecision_{ic}^{K}$ represents an individual decision to participate in the K^{th} alternative to leave, where $K = \{P, T, I\}$, i. e. permanent international (P), temporary international (T), and internal leaves (I). The decision "no leave" is used as a reference category. $LifeSatJ_{ic}$, $J = 2, 3, 4$, is an individual self-reported satisfaction with life in home country; $Econd_{ic}$ is a dummy variable which is equal to one if the decision to migrate is driven by economic factors, such as higher expected income, better working and housing conditions, and zero if the factors are non-economic, for instance, moving closer to family or friends, or expecting better local environment, among other reasons. $\mathbf{X}_{ic}$ include individual socio-economic characteristics, namely age, gender, marital status, children, income, level of education, employment status, and living in urban area. $\mathbf{CD}_c$ are country dummies that account for the average country specific life satisfaction and propensity to migrate. $\mathbf{Politics}_c$ and $\mathbf{Economics}_c$ are the sets of country level political and economic variables, such as GDP per capita, unemployment rate, and Gini coefficient. Also we introduce a dummy variable, CEE_c, that is equal to one if country c is in Central and Eastern Europe and zero, otherwise. θ_c^P and λ_c^J are mean country specific intercepts, while $\varepsilon_{ic}^K, \epsilon_{ic}^J, u_{0c}^P$ and $\zeta_{0c}^{\mathbf{J}}$ are stochastic disturbances.

The responses to life satisfaction questions are categorically ordered and take values from one to four in a Likert scale**.** So to evaluate the effects of each level of life satisfaction on individual migration decision separately, we divide $LifeSat_{ic}$ into

four dummy variables and use the lowest level of life satisfaction as a base category in our estimations. $LifeSatJ^*_{ic}$ stands for the true value of $LifeSatJ_{ic}$.

$$LifeSatJ_{ic} = 1, \text{ if } \begin{cases} LifeSat_{ic} = J \\ LifeSatJ^*_{ic} > 0 \end{cases} \text{, and } 0\text{, otherwise, } J = 1, ..., 4$$

To analyze the determinants of individual migration decision, the within level equations 1a and 1b1-1b3 are estimated by using the maximum likelihood estimation (MLE). By estimating the equation 1a through a multinomial logit model, we examine the direct impact of life satisfaction and individual socio-economic characteristics on the probability to migrate abroad permanently, temporarily, or within country against the reference category of no leave. To analyze the determinants of life satisfaction at each level, the equations 1b1-1b3 are estimated by logit.

For the sake of model identification within and between levels are estimated sequentially. For the estimation of between level equations 2a and 2b1-2b3, the mean country specific intercepts of permanent migration decision, θ^P_c, and life satisfaction, λ^J_c, are constructed from country dummies at within level. We assume that country level political and economic variables directly affect the decision to migrate abroad permanently, and have no direct effect on the decisions about temporary international and internal leaves. Therefore, the mean country specific intercept of permanent migration decision, θ^P_c, is included into between level, while the intercepts of temporary migration decision, θ^T_c, and internal migration, θ^I_c, are not. The equations 2a and 2b1-2b3 are estimated by ordinary least squares and allow to analyze the effects of political and economic variables directly on permanent migration decision and on life satisfaction.

4 Data

The primary data source for examining the model described above is the Eurobarometer survey in 2008. This is a cross-sectional survey based on nationally representative samples that include randomly selected respondents from 27 European countries, out of which 10 are Central and Eastern European countries.[6] There are about 1000 respondents per country. The survey contains questions on individual values and attitudes towards life, previous migration experience and intentions to migrate in future as well as individual socio-economic characteristics. Since the survey has no question on respondent's income, we use a proxy for income, namely the ownership of durable goods: none (1); TV, CD and DVD players, computer, home Internet connection (2); car (3); paying for an apartment/house (4); payed apartment/house (5).

The question on life satisfaction that we use is "*On the whole, are you very satisfied (4), fairly satisfied (3), not very satisfied (2) or not at all satisfied (1) with the life you lead?*" The sample mean life satisfaction scores are presented in Table 1 in appendix. The highest mean life satisfaction in our sample is in Denmark, while the lowest is in Bulgaria. People from Central and Eastern Europe report lower levels of life satisfaction than people from Western European countries. These ranks are consistent with similar ranks from other databases, e.g. World Values Survey.

Survey questions about intended migration used in this research are presented in Figure 2 in appendix. The survey contains also the questions on respondents' past migration experiences. However, we do not analyze such data due to endogeneity problem arising from simultaneity in determinants of migration and life satisfaction. The use of questions on intended migration allows to avoid such a problem if we assume that decision to migrate in future has no impact on current life satisfaction. The following three questions about intended migration are used to construct the

[6] The exact list of countries in our sample is Austria, Belgium, Bulgaria, Cyprus (Republic), Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden, and United Kingdom.

variable of interest $MigrDecision_{ic}^{K}$, namely "*Do you intend to move in the next five years?*", "*Do you intend to move within country or to another country?*", "*How long do you expect to stay abroad?*" As mentioned above, we distinguish three types of leaves: permanent international, temporary international, and internal.

Descriptive statistics for the questions on life satisfaction and intended leaves is presented in Table 2 in appendix. The number of intended migrants for all types of leaves is about 10 percent of our sample. Thus, for some countries we may have a few intended migrants only. However, it should not change the main conclusions of our paper.

Country level data, namely the real GDP per capita, unemployment rates, Gini coefficients are coming from the Eurostat database. Correlation matrix for macro-economic variables is presented in Table 3.

5 Results and Discussion

Individual level estimation results for decision to migrate and life satisfaction are obtained by estimating equations 1a and 1b1-1b3 and presented in Tables 4 and 5 in appendix, respectively. The effects of individual characteristics on intention to migrate and on life satisfaction and consistent with previous literature.

In Table 6, the average probabilities for each choice of migration are calculated. We find that the average probabilities for permanent and temporary migration for the individuals from CEE are 0.6% and 3.19%, and for individuals from non-CEE countries individuals are 0.9% and 8.08%, respectively. The differences between CEE and non-CEE individuals is mainly due to differences in individual characteristics of people from these two groups of countries. However, it is more interesting to compute the average marginal effects for them.[7]

[7]In our explanations we multiply calcultaed marginal effects by 100, so to discuss possible differences between different groups in percentage points.

5.1 Average Marginal Effects

As can be seen from the Table 7A, the average probability of intention to migrate permanently of individuals with satisfaction level 2, "not very satisfied", is lower by 0.64%. While the average probabilities of " fairly satisfied" and "very satisfied" individuals are lower by 1.39% and 1.47%, respectively. In other words, the individual is less likely to migrate permanently if he/she is satisfied more with his/her life. However, the average marginal effects are statistically significant only for "fairly satisfied" and "very satisfied" levels. The similar pattern can be observed in the case of temporary migration. Those individuals who expressed that they are happy with their life are less likely to migrate, 2.03%, 1.46%, and 1.78% for "very satisfied", "fairly satisfied", and "not very satisfied" levels, respectively.

Regarding other characteristics of individuals, we find that the average marginal effects for permanent and temporary migrations are decreasing for an older, married, with a child, higher income, more educated, and employed individual, while the self-employed individual from the urban area who mentioned the importance of economic conditions is more likely to intend to migrate permanently or temporarily. These results confirm the findings of existing literature.

5.2 Migration Decisions in CEE and Non-CEE Countries[8]

Of particular interest is to disentangle the average marginal effects for hypothetical migration decisions of people from CEE and non-CEE countries. A lot of literature has been devoted to the analysis of migration from the Central and Eastern European countries. The main reasons for migration from the CEE region are attributed to economic and political conditions in this region. Macroeconomic instabilities and individual expectations regarding the future income are found to play greater role in permanent or long period intentions to migrate from CEE than in non-CEE

[8]This section represents the differences in intentions to migrate permanently from CEE and non-CEE countries. The results regarding temporary migration are to be discussed in the next version of paper.

countries. This implies that individual and macroeconomic factors of migration decision are to be studied in one framework.

Comparing the average marginal effects for CEE and non-CEE countries in Table 7B, we observe that with an increase in life satisfaction the probability to migrate permanently is decreasing more for individuals from non-CEE than from CEE. For instance, the probability of intention to migrate permanently of "very satisfied" individuals is lower in comparison with the "not at all satisfied" by 1.74% and 1.04% in non-CEE and CEE countries, respectively. In other words, if the life satisfaction of individuals increases by the same amount in both groups of countries, the individuals from the CEE intend to migrate more. Thus, differences in life satisfaction of individuals from CEE and non-CEE result in differences in their migration intentions.

Also, in Table 7B we compute the average marginal effects for intention to migrate for each level of income, employment status, education, age, and regional location of CEE and non-CEE individuals. As can be seen from this table, if life satisfaction increases, the non-CEE individuals are intended to migrate less than the CEE individuals for each level of income. For instance, the probability to migrate permanently for "fairly satisfied" individuals with income level 5 is lower by 1.55% and 0.94% in non-CEE and CEE, respectively. While disentangling the non-CEE from CEE individuals further, we find that the "fairly satisfied" self-employed individuals from non-CEE countries have lower intention to migrate than the CEE ones, by 3.14% and 1.96%, respectively. The same pattern is found for the "fairly satisfied" employed individuals, the probability to migrate permanently is lower by 1.62% for the non-CEE individuals and 0.96% for the CEE ones. For unemployed individuals we find that the intention to migrate is lower in non-CEE countries than in CEE, by 1.65% and 0.99%, respectively. These results are consistent with the existing literature and suggest that the individuals have lower intention to migrate where unemployed benefits are higher. Higher intentions of the employed and self-employed individuals to migrate from CEE provide an additional support for the

role of other than employment and income factors in individual migration decisions.

Comparing the average marginal effects of being "not at all satisfied" individual with "fairly satisfied" one from urban and rural area in Table 7B, we can observe that the probability of intention to migrate permanently decreases by 1.11% and 0.74% in CEE countries, and 1.85% and 1.25% in non-CEE countries, respectively.

In addition, we split the individuals into five age groups, 20, 30, 40, 50, and 60 years old. As can be seen from Table 7B, 20 years old "fairly satisfied" individuals intend to migrate by 1.75% less than their "not at all satisfied" peers in CEE countries, while in non-CEE countries the "fairly satisfied" individuals of the same age group are intended to migrate by 2.79% less than "not at all satisfied".

Regarding the level of education and migration intentions, we find that the "fairly satisfied" non-educated individuals in CEE countries have lower intention to migrate by 1.12% as compared to "not at all satisfied" individuals in these countries, while in non-CEE countries this difference between the "fairly satisfied" and "not at all satisfied" individuals with no full time education is 1.92%. It implies that an increase in life satisfaction may decrease migration intentions of people with lower education in non-CEE countries more than in CEE.

5.3 Country Level Effects

In this section we analyze the relationship between political and economic conditions and the individual migration decision. In particular, we analyze the relationship between the intention to migrate permanently and various country characteristics, such as GDP per capita, unemployment rate and Gini coefficient. Also, we estimate the impact of these macroeconomic variables on the life satisfaction of individuals.

The estimates of country dummy variables for the intention to migrate permanently from the equation 1a are taken as a dependent variable for the equation 2a. These estimates represent the country fixed effects. The values for dependent variables of equations 2b1-2b3 are the estimates of country dummies from equations

1b1-1b3. The dependent variables of these equations represent the average value of being satisfied in a particular country at the satisfaction levels 2, 3, and 4, respectively. Since equations 1a, 1b1-1b3 at within (individual level) and 2a, 2b1-2b3 at between (macro level) levels are estimated sequentially, we use the bootstrapped standard errors. Due to high correlations between macroeconomic variables, we select only logGDP, unemployment rate and Gini as explanatory variables for equations 2a and 2b1-2b3 (see Table 3).

In Table 8, the column labeled as "INTERCEPT PERMANENT" corresponds to equation 2a. As can be seen, none of the macroeconomic variables is statistically significant. This means that logGDP, unemployment rate, and Gini do not affect the intention for permanent migration directly. However, in the next columns that correspond to equations 2b1-2b3, the average values of each level of satisfaction are affected by economic and political conditions. In particular, the portion of individuals being "not very satisfied" (satisfaction level 2) decreases if GDP per capita increases, and increases if unemployment rate and the inequality among individuals rise. For the average value of being "very satisfied" (satisfaction level 4) these macroeconomic variables have an opposite affect meaning that higher GDP per capita, lower unemployment, and smaller inequality among individuals increase the portion of "very satisfied" individuals in a country. All relationships between life satisfaction and macroeconomic variables have an expected sign and underline the importance of improvement of economic and political conditions. As a result of these improvements, the individuals intend to migrate less.[9]

The results of this paper suggest that macroeconomic conditions do not affect directly the intention to migrate permanently. However, these conditions may affect the intention to migrate through life satisfaction. The empirical findings support that the life satisfaction of individuals is an important factor in intention to migrate and can not be ignored in decision making process.

[9] We also estimated the equation 1a without satisfaction variable but we do not find the evidence that macroeconomic variables affect the intention to migrate either.

6 Conclusion

In this paper we analyze the effect of life satisfaction on individual migration intentions. The effects of both individual and country level characteristics are evaluated. The empirical finding of this paper suggest that dissatisfied with life people have higher intention to migrate.

Additionally, we find that discrepancy in life satisfaction of individuals from CEE and non-CEE result in differences in their migration intentions. For instance, at each level of life satisfaction differences in individual migration intentions between the CEE and non-CEE countries arise even for the individuals with the same income level, employment status, education level, and other individual characteristics. Also, the unemployed with the same level of life satisfaction are likely to migrate from CEE more than from non-CEE countries. While the country level economic and political factors do not affect migration decision directly, they do affect indirectly through life satisfaction.

For the policy implications the findings of this paper suggest the importance of improvements in economic, political, and institutional conditions. Such improvements will result in an increase in individual life satisfaction and, thus, lower migration intentions of the individuals. However, the improvements in economic conditions in CEE countries may not bring to the same level of migration intentions as in non-CEE countries.

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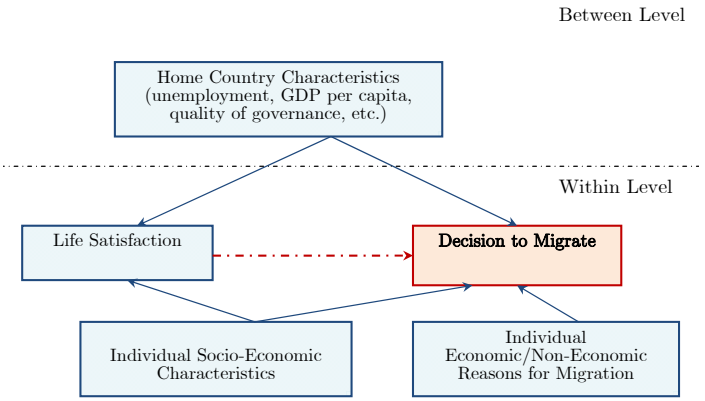
Appendix

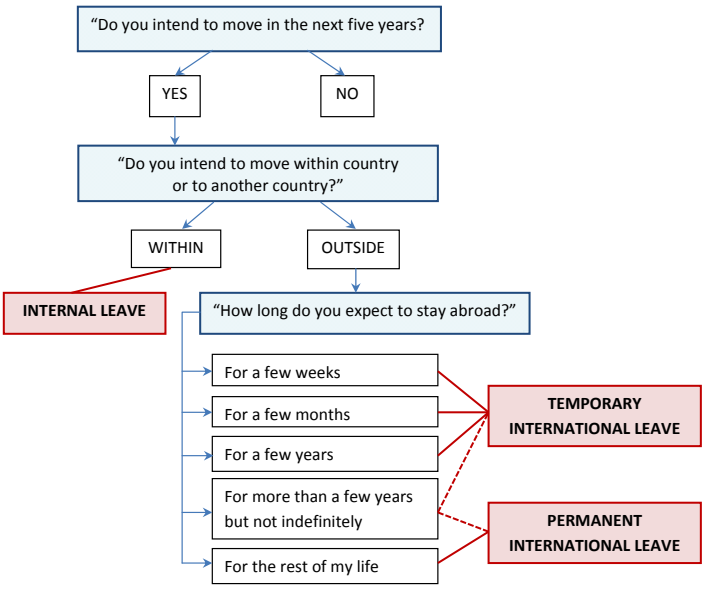
A1. Figures

Figure 1: *Two-level Modeling of Decision to Migrate*



Source: constructed by the authors. *Notes:* Variables are included into boxes. Arrows originating from variables are hypothesized causal effects. Arrors originating from country economic and political variables correspond to equations 2a and 2b1-2b3 and indicate hypothesized direct effects on migration decision and life satisfaction, respectively.

Figure 2: *Survey Questions about Intended Leaves*



Source: the Eurobarometer survey. *Note:* since after a few years a residence permit could be received in most countries, the answer "for more than a few years but not indefinitely" can be attributed to either temporary or permanent international leave. The estimation results are robust to such a modification.

A2. Tables

Table 1: *Sample Mean Life Satisfaction Scores*

Country	Mean Life Satisfaction	Std. Dev.
Denmark	3.612	0.583
Netherlands	3.503	0.558
Sweden	3.453	0.559
Luxembourg	3.300	0.693
Finland	3.272	0.576
United Kingdom	3.198	0.693
Ireland	3.174	0.672
Belgium	3.126	0.689
Cyprus (Republic)	3.123	0.732
Malta	3.036	0.757
Slovenia	3.034	0.723
Spain	2.962	0.622
Austria	2.961	0.634
Germany	2.955	0.717
Czech Republic	2.907	0.574
France	2.895	0.726
Poland	2.813	0.665
Estonia	2.801	0.618
Slovakia	2.729	0.715
Lithuania	2.636	0.789
Latvia	2.616	0.728
Italy	2.614	0.690
Greece	2.478	0.754
Romania	2.391	0.745
Portugal	2.364	0.741
Hungary	2.307	0.810
Bulgaria	2.189	0.791

Source: constructed by the authors using the Eurobarometer survey. *Notes:* countries are ranked according to mean life satisfaction score. The countries of Central and Eastern Europe are shaded.

Table 2: *Number of Intended Leaves by Life Satisfaction*

		Life Satisfaction						
		1 (not at all satisfied)	2 (not very satisfied)	3 (fairly satisfied)	4 (very satisfied)	Total number of respondents	Percent	Cumul.
Intended Leave	0 (permanent international)	19	53	97	42	211	0.86	0.86
	1 (temporary international)	65	191	863	412	1 531	6.24	7.10
	2 (internal)	47	170	395	215	827	3.37	10.48
	3 (no leave)	1 211	4 354	12 019	4 368	21 952	89.52	100.00
	Total number of respondents	1 342	4 768	13 374	5 037	24 521		
	Percent	5.47	19.44	54.54	20.54			
	Cumul.	5.47	24.92	79.46	100.00			

Source: constructed by the authors using the Eurobarometer survey.

Table 3: *Correlation Matrix for Macroeconomic Variables*

	CEE	log(GDP per capita)	unemployment rate	inflation rate	government effectiveness	Gini coefficient
CEE	1.0000					
log(GDP per capita)	-0.8487	1.0000				
unemployment rate	0.0491	-0.2013	1.0000			
inflation rate	0.7088	-0.6932	0.0006	1.0000		
government effectiveness	-0.6348	0.8363	-0.3500	-0.5422	1.0000	
Gini coefficient	0.1501	-0.4152	0.2509	0.5019	-0.5754	1.0000

Source: constructed by the authors using the Eurostat and WGI data from Kaufman et al. [29].

Table 4: *Within Level Results for Decision to Migrate*

Multinomial Logit Estimation	PERMANENT		TEMPORARY		INTERNAL	
Constant	-0.701	(0.678)	1.115 ***	(0.308)	0.384	(0.423)
Life Satisfaction =2	-0.452	(0.276)	-0.353 **	(0.155)	-0.213	(0.183)
Life Satisfaction =3	-1.243 ***	(0.275)	-0.363 **	(0.145)	-0.769 ***	(0.178)
Life Satisfaction =4	-1.373 ***	(0.324)	-0.465 ***	(0.158)	-0.626 ***	(0.195)
Married	-0.378 **	(0.178)	-0.402 ***	(0.068)	-0.479 ***	(0.105)
Male	0.288 *	(0.149)	0.045	(0.058)	0.317 ***	(0.077)
Age	-0.040 ***	(0.006)	-0.049 ***	(0.003)	-0.073 ***	(0.004)
Child	-0.112	(0.088)	-0.057	(0.036)	-0.145 ***	(0.051)
Income	-0.101	(0.072)	-0.181 ***	(0.029)	-0.111 ***	(0.038)
Urban	0.517 ***	(0.172)	0.221 ***	(0.063)	0.509 ***	(0.090)
Education Less than 20 Years	-0.557	(0.445)	-0.399 *	(0.207)	-0.538 **	(0.275)
Education More than 20 Years	-0.555	(0.462)	-0.181	(0.208)	-0.005	(0.277)
Student	-0.376	(0.516)	-0.456 **	(0.227)	0.167	(0.301)
Econd	0.662 ***	(0.167)	0.382 ***	(0.061)	-	
Employed	-0.051	(0.206)	-0.130 *	(0.078)	-0.037	(0.121)
Self-employed	0.874 ***	(0.264)	0.005	(0.128)	0.382 **	(0.176)
Country Dummies	Yes		Yes		Yes	
Number of Observations	24521		24521		24521	

Source: authors' calculations. *Notes:* standard errors are in parentheses. ***, **, * stand for 1, 5, and 10 percent significance levels, respectively. Life satisfaction =1 ("not at all satisfied") is used as base category of life satisfaction; no full time education is a base category for education level; the unemployed is a base category for employment status.

Table 5: *Within Level Results for Life Satisfaction*

Maximum Likelihood Estimation	LIFE SATISFACTION=2		LIFE SATISFACTION=3		LIFE SATISFACTION=4	
Constant	2.752 ***	(0.231)	-0.297 *	(0.169)	0.452 **	(0.230)
Married	-0.353 ***	(0.039)	0.073 **	(0.030)	0.520 ***	(0.005)
Male	-0.037	(0.036)	0.007	(0.027)	-0.038	(0.036)
Age	0.070 ***	(0.001)	-0.022 ***	(0.005)	-0.072 ***	(0.007)
Age squared	-0.065 ***	(0.001)	0.021 ***	(0.005)	0.064 ***	(0.006)
Child	0.026	(0.003)	-0.055 ***	(0.018)	-0.012	(0.023)
Income	-0.151 ***	(0.018)	0.056 ***	(0.014)	0.197 ***	(0.022)
Urban	-0.021	(0.037)	0.082 ***	(0.028)	-0.042	(0.038)
Education Less than 20 Years	0.033	(0.105)	0.155 *	(0.087)	-0.110	(0.131)
Education More than 20 Years	-0.365 ***	(0.111)	0.208 **	(0.090)	0.314 **	(0.133)
Student	-0.791 ***	(0.151)	0.289 ***	(0.113)	0.650 ***	(0.159)
Employed	-0.287 ***	(0.047)	0.292 ***	(0.036)	0.095 *	(0.049)
Self-employed	-0.368 ***	(0.077)	0.269 ***	(0.058)	0.230 ***	(0.078)
Country Dummies	Yes		Yes		Yes	
Number of Observations	24521		24521		24521	

Source: authors' calculations. *Notes:* standard errors are in parentheses. ***, **, * stand for 1, 5, and 10 percent significance levels, respectively. No full time education is used as a base category for education level, the unemployed are used as a base category for employment status.

Table 6: *Predicted Probabilities for Intentions to Migrate*

Predicted Probability	Obs.	Mean	St.Dev.	Min	Max
	CEE Countries				
PERMANENT	9164	0.0065	0.0090	0.0000	0.1036
TEMPORARY	9164	0.0319	0.0331	0.0010	0.2200
INTERNAL	9164	0.0373	0.0653	0.0001	0.5078
	Non-CEE Countries				
PERMANENT	15357	0.0098	0.0162	0.0000	0.4105
TEMPORARY	15357	0.0806	0.0927	0.0006	0.6035
INTERNAL	15357	0.0316	0.0524	0.0001	0.5382

Source: authors' calculations.

Table 7A: *Average Marginal Effects*

Average Marginal Effects	Probability to Migrate PERMANENTLY		Probability to Migrate TEMPORARILY		Probability to Migrate INTERNALLY	
Life Satisfaction =2	-0.0064	(0.005)	-0.0179 *	(0.010)	-0.0055	(0.007)
Life Satisfaction =3	-0.0139 ***	(0.005)	-0.0146	(0.009)	-0.0224 ***	(0.007)
Life Satisfaction =4	-0.0148 ***	(0.005)	-0.0203 **	(0.010)	-0.0180 **	(0.008)
Married	-0.0025 *	(0.001)	-0.0187 ***	(0.003)	-0.0117 ***	(0.003)
Male	0.0022 *	(0.001)	0.0007	(0.003)	0.0090 ***	(0.002)
Age	-0.0002 ***	(0.000)	-0.0022 ***	(0.000)	-0.0019 ***	(0.000)
Child	-0.0008	(0.001)	-0.0022	(0.002)	-0.0039 ***	(0.001)
Income	-0.0006	(0.001)	-0.0089 ***	(0.002)	-0.0024 **	(0.001)
Urban	0.0035 ***	(0.001)	0.0088 ***	(0.003)	0.0127 ***	(0.002)
Education Less than 20 Years	-0.0042	(0.004)	-0.0183 *	(0.010)	-0.0136 *	(0.008)
Education More than 20 Years	-0.0041	(0.003)	-0.0087	(0.010)	0.0010	(0.008)
Student	-0.0025	(0.003)	-0.0216 **	(0.009)	0.0073	(0.009)
Econd	0.0051 ***	(0.001)	0.0192 ***	(0.003)	-0.0021 ***	(0.000)
Employed	-0.0003	(0.002)	-0.0066 *	(0.004)	-0.0005	(0.003)
Self-employed	0.0099 **	(0.004)	-0.0029	(0.006)	0.0117 *	(0.006)
Country Dummies	Yes		Yes		Yes	
Number of Observations	24521		24521		24521	

Source: authors' calculations. *Notes:* standard errors calculated by Delta method are in parentheses. ***, **, * stand for 1, 5, and 10 percent significance levels, respectively.

Table 7B: *Average Marginal Effects for CEE and Non-CEE Countries*

	CEE		non-CEE	
Average Marginal Effects by Satisfaction Level				
Life Satisfaction =2	-0.0047	(0.004)	-0.0074	(0.006)
Life Satisfaction =3	-0.0098 ***	(0.004)	-0.0164 ***	(0.006)
Life Satisfaction =4	-0.0104 ***	(0.004)	-0.0174 ***	(0.006)
Average Marginal Effects by Satisfaction and Income Levels				
Life Satisfaction =2				
at income level =1	-0.0057	(0.005)	-0.0082	(0.007)
at income level =2	-0.0054	(0.004)	-0.0080	(0.007)
at income level =3	-0.0051	(0.004)	-0.0077	(0.006)
at income level =4	-0.0048	(0.004)	-0.0074	(0.006)
at income level =5	-0.0045	(0.004)	-0.0071	(0.006)
Life Satisfaction =3				
at income level =1	-0.0121 **	(0.005)	-0.0188 **	(0.007)
at income level =2	-0.0114 **	(0.004)	-0.0180 ***	(0.007)
at income level =3	-0.0107 ***	(0.004)	-0.0172 ***	(0.006)
at income level =4	-0.0100 ***	(0.004)	-0.0164 ***	(0.006)
at income level =5	-0.0094 ***	(0.004)	-0.0155 ***	(0.006)
Life Satisfaction =4				
at income level =1	-0.0129 **	(0.005)	-0.0199 ***	(0.008)
at income level =2	-0.0121 ***	(0.004)	-0.0191 ***	(0.007)
at income level =3	-0.0114 ***	(0.004)	-0.0182 ***	(0.006)
at income level =4	-0.0106 ***	(0.004)	-0.0174 ***	(0.006)
at income level =5	-0.0099 ***	(0.004)	-0.0164 ***	(0.006)
Average Marginal Effects by Satisfaction Level and Self-Employment				
Life Satisfaction =2				
unemployed	-0.0044	(0.003)	-0.0069	(0.006)
self-employed	-0.0094	(0.008)	-0.0140	(0.012)
Life Satisfaction =3				
unemployed	-0.0092 ***	(0.003)	-0.0153 ***	(0.006)
self-employed	-0.0196 **	(0.008)	-0.0314 **	(0.013)
Life Satisfaction =4				
unemployed	-0.0097 ***	(0.003)	-0.0161 ***	(0.006)
self-employed	-0.0209 **	(0.009)	-0.0335 **	(0.014)
Average Marginal Effects by Satisfaction Level and Employment				
Life Satisfaction =2				
unemployed	-0.0048	(0.004)	-0.0074	(0.006)
employed	-0.0047	(0.004)	-0.0073	(0.006)
Life Satisfaction =3				
unemployed	-0.0100 ***	(0.004)	-0.0165 ***	(0.006)
employed	-0.0096 ***	(0.004)	-0.0162 ***	(0.006)
Life Satisfaction =4				
unemployed	-0.0106 ***	(0.004)	-0.0175 ***	(0.006)
employed	-0.0102 ***	(0.004)	-0.0172 ***	(0.006)
Number of Observations	9164		15357	

Source: authors' calculations. *Notes:* standard errors calculated by Delta method are in parentheses. ***, **, * stand for 1, 5, and 10 percent significance levels, respectively.

Table 7B: *Average Marginal Effects for CEE and Non-CEE Countries*

	CEE		non-CEE	
Average Marginal Effects by Satisfaction Level and High Education				
Life Satisfaction =2				
No Full Time Education	-0.0054	(0.004)	-0.0086	(0.007)
Education More than 20 Years	-0.0033	(0.003)	-0.0055	(0.005)
Life Satisfaction =3				
No Full Time Education	-0.0113 ***	(0.004)	-0.0192 **	(0.008)
Education More than 20 Years	-0.0067 **	(0.003)	-0.0120 **	(0.006)
Life Satisfaction =4				
No Full Time Education	-0.0120 ***	(0.005)	-0.0204 **	(0.008)
Education More than 20 Years	-0.0071 **	(0.003)	-0.0127 **	(0.006)
Average Marginal Effects by Satisfaction Level and Low Education				
Life Satisfaction =2				
No Full Time Education	-0.0062	(0.005)	-0.0093	(0.008)
Education Less than 20 Years	-0.0041	(0.003)	-0.0065	(0.005)
Life Satisfaction =3				
No Full Time Education	-0.0129 **	(0.006)	-0.0209 **	(0.009)
Education Less than 20 Years	-0.0084 **	(0.003)	-0.0142 **	(0.006)
Life Satisfaction =4				
No Full Time Education	-0.0137 **	(0.006)	-0.0221 **	(0.010)
Education Less than 20 Years	-0.0089 ***	(0.003)	-0.0150 ***	(0.006)
Average Marginal Effects by Satisfaction Level and Age Group				
Life Satisfaction =2				
age=20	-0.0082	(0.007)	-0.0117	(0.011)
age=30	-0.0069	(0.005)	-0.0107	(0.009)
age=40	-0.0053	(0.004)	-0.0092	(0.007)
age=50	-0.0039	(0.003)	-0.0073	(0.006)
age=60	-0.0028	(0.002)	-0.0056	(0.004)
Life Satisfaction =3				
age=20	-0.0175 **	(0.007)	-0.0279 **	(0.011)
age=30	-0.0143 ***	(0.005)	-0.0244 ***	(0.009)
age=40	-0.0109 ***	(0.004)	-0.0200 ***	(0.007)
age=50	-0.0079 ***	(0.003)	-0.0155 ***	(0.006)
age=60	-0.0056 ***	(0.002)	-0.0115 ***	(0.004)
Life Satisfaction =4				
age=20	-0.0187 **	(0.007)	-0.0298 **	(0.012)
age=30	-0.0151 ***	(0.005)	-0.0259 ***	(0.010)
age=40	-0.0115 ***	(0.004)	-0.0211 ***	(0.008)
age=50	-0.0083 ***	(0.003)	-0.0163 ***	(0.006)
age=60	-0.0059 ***	(0.002)	-0.0121 ***	(0.004)
Average Marginal Effects by Satisfaction Level and Type of Community				
Life Satisfaction =2				
Rural	-0.0036	(0.003)	-0.0057	(0.005)
Urban	-0.0054	(0.004)	-0.0083	(0.007)
Life Satisfaction =3				
Rural	-0.0074 **	(0.003)	-0.0126 **	(0.005)
Urban	-0.0111 ***	(0.004)	-0.0185 ***	(0.007)
Life Satisfaction =4				
Rural	-0.0078 ***	(0.003)	-0.0133 ***	(0.005)
Urban	-0.0119 ***	(0.004)	-0.0196 ***	(0.005)
Number of Observations	9164		15357	

Source: authors' calculations. *Notes:* standard errors calculated by Delta method are in parentheses. ***, **, * stand for 1, 5, and 10 percent significance levels, respectively.

Table 8: *Between Level Results for Life Satisfaction and Decision to Migrate Permanently*

OLS estimation	INTERCEPT PERMANENT		INTERCEPT LIFE SATISFACTION=2		INTERCEPT LIFE SATISFACTION=3		INTERCEPT LIFE SATISFACTION=4	
Constant	-6.710	(10.234)	5.484 ***	(1.787)	-0.542	(1.918)	-7.237 ***	(2.295)
Ln(Real GDP per capita)	1.025	(0.898)	-0.793 ***	(0.135)	0.061	(0.139)	0.972 ***	(0.160)
Unemployment	-0.517	(0.498)	0.107	(0.079)	0.085	(0.052)	-0.160 **	(0.079)
Gini	-0.064	(0.149)	0.067 **	(0.028)	-0.027	(0.028)	-0.061 *	(0.035)
Adj. R-squared	0.157		0.665		0.062		0.709	
Number of Observations	27		27		27		27	

Source: authors' calculations. *Notes:* dependent variable is mean country-specific intercept of decision to migrate pemanently (life satisfaction) from within level. Bootstrapped standard errors are in parentheses. ***, **, * stand for 1, 5, and 10 percent significance levels, respectively.