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Life satisfaction and return migration: analysing the role of life satisfaction for migrant return intentions in Germany

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ABSTRACT

This study analyses the role of life satisfaction for the intention of migrants to return to their country of origin. It is argued that the utility function of return migration is a function of life satisfaction gains and losses due to migration. Using the German Socio-Economic Panel and the World Value Survey, first-generation migrants from 26 countries were studied on the country level and within a random intercept logistic regression framework. The results suggest that cross-country differences in the intended return rate can be explained by expected cross-country differences in the life satisfaction gains/losses of migrants that return. However, the effect might be quadratic rather than linear. On the micro data level as well, migrants tend to settle or return depending on the life satisfaction in Germany and their country of origin. This effect seems to be driven by relatively recent arrivals and migrants with transnational social ties. The study concludes that migration decisions are to some degree determined by life satisfaction maximisation and that this life satisfaction maximisation behaviour can be best observed when migrants know what to expect from their move.

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Introduction

What determines whether an immigrant settles down in the current host country? From an economic perspective, individuals are rational and aim to maximise their utility (Becker 1978). Therefore, individuals migrate to increase their welfare (Borjas 1989). For most migrants, the primary alternative to staying in the host country is to return to their country of origin (CO) (Nekby 2006). Thus migrants return if the utility in their country of origin exceeds their present utility in the host country (HO).

Two main theories from the field of economics are used to explain return migration decisions of utility-maximising migrants: the neoclassic economic (NE) theory of return migration and the new economics of labour migration (NELM) theory. Both theories capture utility over income but come to opposite conclusions (Constant and Massey

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2002; Bijwaard and Wahba 2014; Haas, Fokkema, and Fihri 2015). In the NE theory, no locational consumption preference exists and migrants consume their income in the host country (Sjaastad 1962; Todaro 1969). Migrants return if the utility gained through the consumption in the host country does not outweigh the social psychological costs of moving to the host country (Cassarino 2004). In the NELM perspective, migrants hold a locational consumption preference for their country of origin and move to the host country only for a limited amount of time. In this perspective, migrants save up money and send home remittance to prepare their return (Stark 1991). On the one hand, a high income increases the probability that a migrant's utility gain through consumption outweighs the social-psychological costs of moving and thus decreases the probability of return migration (i.e. the NE theory). On the other hand, a high income increases the likelihood that migrants reach their target for their successful return (Dustmann 2003) (i.e. the NELM theory).

A number of economists have pointed out this ambiguous effect of income on the return propensity of migrants and suggest that both are true at the same time (Constant and Massey 2002; Bijwaard and Wahba 2014; Haas, Fokkema, and Fihri 2015): For some migrants income increases the likelihood of return while the opposite is true for others. Thus income appears to be a somewhat insufficient measure of utility when it comes to predicting decisions of return migration.

Alternatively, there have been calls to study migrant behaviour in a more holistic way using subjective well-being (SWB) rather than discipline-specific, one-dimensional indicators such as income (Wright 2011; Hendriks and Bartram 2019). This paper uses the conscious component of subjective well-being (SWB), which is life satisfaction (Veenhoven 2012), as a way of measuring the effect of utility maximisation on immigrants' decision-making.

Thereby, the paper is structured roughly into two parts: First, the properties of subjective utility measures in migration and more specifically return migration are explored theoretically. In the second part, the effect of life satisfaction maximisation on return intentions of first-generation migrants in Germany is analysed in a quantitative fashion, primarily using data from the German Socio Economic Panel (GSOEP) and the World Value Survey (WVS).

The study indicates that migrants try to maximise their life satisfaction by strategically choosing whether or not to return to their country of origin. The effect of projected life satisfaction in the country of origin is thereby largely driven by migrants with a relatively short stay in Germany (i.e. <17 years) and transnational ties to their source country. This finding suggests that well-being maximisation in return migration might depend on reliable information about the origin country. Overall, patterns of life satisfaction maximisation seem to explain a substantial amount of cross-country variation in the rate of intended return. The effect of average life satisfaction gains/losses may be exponential rather than linear.

The reason for subjective utility measures in return migration

The literature connecting SWB to utility is well established (see Dolan, Peasgood, and White 2008, for an overview). However, even though SWB proves to be a reliable

measure of utility within a given society, it is a subjective measure and, thus, has some possible issues, such as the effect of cultural background on the self-evaluation.

The causes of SWB vary across cultural contexts (Tam, Lau, and Jiang 2012). However, this cross-cultural variation is convincingly explained by cultural variations in values (Diener et al. 1999) and cultural variation in the self-construal (Suh, Diener, and Updegraff 2008; Cheng et al. 2016). Additionally, the effect of income on SWB depends on the optimism of an individual (Diener, Tay, and Oishi 2013), and the level of optimism is influenced by the cultural context of the individual (Heine and Lehman 1995; Chang 1996). However, this does not mean that SWB is not a reliable measure of utility. Utility is, in the last instance, a subjective measure, as it is the subjective evaluation of welfare gained from objective circumstances. Taking this fundamentally subjective nature of utility into account, it is clear that personal traits, which are influenced by culture, have (and should have) an impact on the utility evaluation.

Only if a significant bias between how individuals rate their SWB and how they actually feel exists and if this bias systematically differs across countries, does SWB become unreliable. However, many studies have used SWB across cultures (Easterlin 1974; Helliwell 2007; Stevenson and Wolfers 2008; Hadjar and Backes 2013; Samuel and Hadjar 2016), and it appears that SWB is a rather robust utility measure that can be used in this context.

Another appealing property of SWB, specifically when analysing decisions of return migration, is that the level of SWB is thought to be driven by the level of fulfilment of one's own goals and expectations (Diener and Fujita 1995; Diener et al. 1999). An individual that achieves his/her expectations will increase in SWB and vice versa. Individuals emigrate with specific expectations, which are then either met or disappointed in the host country. This will translate into SWB of the immigrants in the host country, making SWB a good measure of achieved expectations. This allows us to answer an old question in economic migration research: Is return migration due to failure or success? Past research tried to answer this question using income and other objective measures of utility (Constant and Massey 2002; Bijwaard and Wahba 2014; Haas, Fokkema, and Fihri 2015). However, this approach has a number of issues. First, it is unclear if income was even the motivation behind the migration. The perspective that regards return migration as a failure, for example, predicts an increase in return migration with a decrease in income (Sjaastad 1962; Todaro 1969). They argue that with decreasing income, the migration project will increasingly be regarded as a failure and migrants will return. However, income is a problematic utility measure when it comes to answering the question of whether return migration is due to a long-held plan (i.e. success) or unmet expectations (i.e. failure). First, income might not be the immigrant's own ruler on which to judge the success of the migration project. An individual that migrated for family unification could judge success based on re-establishing a good relationship with his/her family. Plenty of other expectations that are either met or disappointed can be thought of. In this regard, income fails to capture the entirety of factors that make migration a success or failure. Second, income, in contrast to life satisfaction, can be stored and spent later at a different location. This property of income gave rise to the NELM perspective (Stark 1991; Dustmann 2003). Individuals that migrate with the plan to work and save money in the host country and then return back to their origin will regard return a success. Economists seem to settle their argument by concluding that return migration can be due to both failure or success (Constant and Massey 2002; Bijwaard and Wahba 2014; Haas, Fokkema, and Fihri 2015). However,

they cannot judge to which extent each of the two mechanisms (i.e. return due to failure, return due to success) is at work. SWB, with its unique property of measuring achieved expectations, is a perfect candidate to answer this question.

Subjective well-being and migration

SWB appears to be a reliable utility measure even when used across cultures. Furthermore, as a measure of met expectations, it is an even more relevant measure for return migration. A substantial body of research has analysed the association between SWB and migration. In fact, the special edition of the World Happiness Report 2018 by the United Nations investigates the relation between SWB and migration. However, all studies so far have only looked at the association between currently held SWB and migration.

In a cross-country study, Polgreen and Simpson (2011) found a U-shaped relationship between out-migration rate and average happiness within the country. In other words, emigration rates decline with an increase in the country-level happiness for low-happiness countries but surge with increasing country-level happiness for high-happiness countries. In their study of Latin American immigrants, Graham and Markowitz (2011) found that individuals with the intent to emigrate have a lower SWB. Using a vast dataset including a large number of countries (i.e. World Gallup Poll), Cai et al. (2014) found that individuals with lower SWB have a higher propensity to emigrate. This holds true on the individual level and the country level. On the other hand, Bartram (2013) found the opposite pattern for potential Eastern European migrants. Mara and Landesmann (2013) show, in accordance with the theory of this paper, an increased propensity of return migration for low SWB Romanian migrants to Austria. In a similar fashion, Shamsuddin and Katsaiti (2019) show that migrants who are happy with their life tend to stay permanently in Germany.

Overall, it appears that despite the desirable properties of SWB as a utility measure in migration, empirical results on out-migration are somewhat inconclusive. Thus one might wrongfully doubt either that migrants are rational or that SWB is an appropriate measure. However, what drives migration decisions in the utility maximisation perspective is not the singular, absolute value of utility in one country but rather the expected differentials between the two countries in question. Individuals might have biased expectations during out-migration regarding their future SWB abroad. Individuals with high SWB might expect even higher SWB abroad whereas low SWB individuals express more pessimistic expectations (Polgreen and Simpson 2011). This bias can be expected to be much smaller for the decision of return migration, as has been demonstrated by studies indicating that migrants are well aware of the situation in their country of origin (e.g. Akay, Bargain, and Zimmermann 2017). This is in line with the studies that indicate that well-being is in fact predictive of return migration. However, no study to date has included the expected well-being in the country of origin. If little or no bias in the utility expectations of [return]migrants is assumed, the expected utility can be modelled on the realities in the country of origin. This paper has done exactly that.

Subjective utility, return migration and transnationalism

It has been shown that the literature regards subjective well-being and its conscious component life satisfaction as a good utility measure even when used across cultures.

Additionally, the nature of subjective utility measures as a ruler of met expectations makes it especially useful to the study of return migration. The following section will bring together the measure of life satisfaction, the economic rational choice based theory on return migration and a transnational perspective. From this framework, a number of hypothesis are deducted.

Because subjective life satisfaction in contrast to income cannot be stored and consumed later, we can simply adapt the traditional neoclassic economic (NE) model for the use of life satisfaction rather than income. This allows us to create a straightforward rational choice model: Migrants will return if the utility gain outweighs the utility cost of return migration.

Hypothesis I: An immigrant in Germany will return to the country of origin if:

$$U_{io} - U_{ih} > C_i$$

U_{io} , Utility of Individual i in origin country o ; U_{ih} , Utility of Individual i in host country h ;

C_i , Utility cost of return migration of individual i

Hypothesis I is supported by the findings that return migration depends on the well-being in the host country (Mara and Landesmann 2013; Shamsuddin and Katsaiti 2019). In this perspective, however, the level of information a migrant holds is crucial to explain the migrant's decision. Only if the migrant is aware of the potential utility gain was she/he to return to the origin country can we model the expectations after the realities. When it comes to understand the level of information a migrant in Germany might hold about the respective country of origin, the transnational perspective on migration can be helpful.

At its core, transnationalism focuses on the fact that many migrants have a strong linkage to both their source and their host country (Schiller, Basch, and Blanc-Szanton 1992). These transnational links allow the diaspora and source country to exchange information. The transnational connection of individuals in the diaspora with their source country community can thus influence their return decision not only over the social connection itself but also over the information shared. If the shared information is largely correct, the diaspora will become better informed and thus become more efficient life satisfaction maximisers.

Hypothesis II: Individuals with transnational ties are better life satisfaction maximisers due to their lower cost of returning and their better level of information. The effect of life satisfaction differences on the intention to return will therefore be larger for individuals with transnational ties.

As time progresses immigrants will integrate into the host society and transnational ties will decline. With the decline of transnational ties, the logistic cost of returning will increase while the level of information will decrease. Thus the effect of life satisfaction maximisation will decline over time.

Hypothesis III: With the erosion of transnational ties over time, the effect of life satisfaction maximisation will decline.

In conclusion, using subjective life satisfaction as utility measure offers an opportunity to estimate return migration due to failure. In contrast to the existing literature on SWB and

the decision to migrate, a proxy for the expected utility in the origin country must be employed to take advantage of this opportunity. We chose to model the expectations after the realities in the country of origin whilst keeping in mind the level of information and therewith the expectations immigrants in Germany might hold about their origin country.

Data

In this study, the rates of intended return migration of immigrants in Germany are analysed. Germany is home to the largest immigrant community in Europe (and second largest in the world, topped only by the United States) in absolute numbers according to the OECD (2017). The main data source for this research is the German Socio-Economic Panel (GSOEP), with a specific focus on the 2014 migrant sample. The SOEP is a highly regarded dataset provided by the German Institute for Economic Research (i.e. DIW). It is known for its high quality and low dropout rates (see Goebel et al. 2019; Kühne and Kroh 2017). This dataset is particularly useful for testing the effect of life satisfaction relative to the origin country as it is comprised of a large variety of origin countries.

For the production of the counterfactual life satisfaction of migrants if they had stayed in their country of origin, data from the 2005–2013 World Value Survey is used (Inglehart et al. 2019). Each round of surveys for a given year and country consists of approximately 1000 individuals. However, the year in which a given country was surveyed as well as how often a country was surveyed (and thus the overall sample size) varies between countries (see Appendix A1). All observations within a country were pooled together over all years. Observations with missing values in the WVS sample were dropped, resulting in 3.8% of the WVS sample being dropped.

Along with the individual-level data from the SOEP, country-level data was merged from various sources. All country-level data refers to the year 2014 of the SOEP survey: GDP from the World Bank (World Bank 2017), geographic distance between Germany and the country of origin from the Centre d'Etudes Prospectives et d'Informations Internationales (CEPII 2017) (see Mayer and Zignago 2011), religious and linguistic distance from Devleeschauwer et al. (2003), and information about the number of migrants from a specific country of origin in Germany from the statistical office of Germany ('GENESIS-Online Datenbank: Ausländer in Deutschland, Stichtag, Geschlecht, Altersjahre, Migrantengeneration, Ländergruppierungen/ Staatsangehörigkeit' 2017).

Following Hippel (2007), all missing values of individual-level variables were imputed simultaneously, while excluding observations with missing values in the dependent variable (i.e. life satisfaction) in the analysis (nine missing values for life satisfaction were dropped). The imputation was performed using the averaged value of multiple imputations (i.e. 10) drawn from a multivariate normal distribution and rounded to the next feasible value. As a robustness check all models were also ran on a sample where all observations with missing values were simply dropped. The results remained robust.

If information was missing on the GDP for a particular year and country, the last available year (i.e. the last available year in the World Bank Data) with information on GDP for the same country was imputed. Finally, information on the religious and linguistic distance to Serbia was missing which was solved by imputing the values of Croatia.¹ Only

cases over the age of 18, from countries covered in the WVS, and surveyed in the year 2014 were considered.

Furthermore, observations of migrants from countries with less than 20 migrants in the sample were dropped. This is to ensure a minimum group size for the country-level analysis. However, the multilevel models were also run without minimum group size. The results remained robust (see Appendix A5). The final sample size is 3696 migrants from 26 countries. As the country Thailand proves to be a drastic outlier (more on this later), it is excluded from the country-level calculations (thus 25 countries). However, as a robustness check, the country-level calculations were also performed including Thailand and the results remained robust. Table 1 reports the countries of origin in the sample and the distribution of migrants among them. Migrants were detected by a survey question asking for the country they were born in.

The variable ‘Citizenship’ measures if a migrant is a naturalised German citizen (the column ‘citizen’ shows the percentage of naturalised migrants).

The dependent variable was constructed from combining two survey questions; first, migrants were asked: ‘Did you recently seriously consider moving abroad for longer or forever?’ If migrants answered with yes, they were asked to which country they would like to move. Migrants that said they would want to move to the same country in which they were born were coded as having an intention of return migration.

Table 2 shows the summary statistics for all variables used in the models. The explanatory variables are thereby the life satisfaction variables. Life satisfaction is regarded as the conscious component of the subjective well-being construct (Veenhoven 2012). The other variables work as a control. All variables except the dichotomous variables were

Table 1. Number of migrants across country of origin and their share of citizenship.

Country of origin	N	Citizen (%)
Russia	695	79
Kazakhstan	555	90
Poland	543	61
Turkey	494	30
Romania	311	51
Italy	229	10
Ukraine	171	41
Serbia	87	10
Spain	73	10
Kyrgyzstan	67	87
Netherlands	46	17
France	39	26
Morocco	37	51
Iran	36	81
USA	35	26
UK	33	21
Lebanon	32	41
Bulgaria	29	33
Iraq	29	66
Belarus	27	33
Azerbaijan	25	4
Hungary	22	18
Thailand	21	10
Philippines	20	80
Pakistan	20	35
Uzbekistan	20	75
Total	3,696	55

Table 2. Descriptive statistics.

	Mean	sd	Min.	Max.
Return	0.08		0.00	1.00
SWB (Germany)	7.46	1.71	0.00	10.00
SWB (CO)	6.32	0.75	3.71	9.03
SWB difference	1.14	1.85	−6.83	6.00
Citizenship	0.55		0.00	1.00
Years in Germany	18.76	10.54	0.00	64.00
Age at immigration	24.60	13.35	0.00	91.00
Aussiedler	0.35		0.00	1.00
Asylum	0.06		0.00	1.00
Child	0.65		0.00	1.00
Male	0.45		0.00	1.00
Married	0.74		0.00	1.00
Basic education	0.06		0.00	1.00
Lower sec. education	0.21		0.00	1.00
Upper sec. education	0.36		0.00	1.00
Post sec. education	0.14		0.00	1.00
Tertiary education	0.23		0.00	1.00
Full emp.	0.39		0.00	1.00
Part emp.	0.15		0.00	1.00
Training	0.02		0.00	1.00
Marginal emp.	0.09		0.00	1.00
Unemployed	0.35		0.00	1.00
Self-employment	0.05		0.00	1.00
Income (std. adult)	18,443	11,028	0	166,882
Remittance	272	1,144.05	0	20,000
Social ties (CO)	0.76		0.00	1.00
GDP	23,970	820	335	54,599
Mig. population	441,657	476,923	8437	1,527,118
Geographic distance	2010	1462	516	9872
Linguistic distance	0.97	0.01	0.90	1.00
Religious distance	0.83	0.10	0.66	1.00
EU	0.43		0.00	1.00

standardised. The dependent variable is denoted as ‘Return.’ The explanatory variable ‘LS-Difference’ is the difference between the life satisfaction in Germany (i.e. LS (HO)) and life satisfaction in the country of origin (i.e. LS (CO)). The variable ‘Years in Germany’ measures the elapsed time since arrival to Germany in years. Eventual breaks in the time spent in Germany (e.g. temporal stay in the country of origin) are not accounted for. ‘Age at arrival’ is calculated by subtracting the years since arrival from the current age. The variable ‘Aussiedler’ captures whether a migrant belongs to this specific group of ethnic German migrants from the ex-UDSSR countries who are known in Germany as ‘(Spät)Aussiedler’. The variable ‘Asylum’ documents if the migrant was considered an asylum seeker at arrival.

The income of migrants is the household income scaled for a standard adult. This is done by dividing the household income by the square root of household members. The remittance migrants send to their origin countries is measured as the amount send over the last year (i.e. in Euro). Furthermore, a binary variable captures whether the migrant currently has regular contact (i.e. transnational ties), with either friends or family that live in the origin country.

The variables ‘Child’ and ‘Married’ capture if the migrant is married and if a child under the age of 16 lives in the household. Education is measured as a categorical variable indicating the highest obtained educational degree in accordance with the 2011

International Standard Classification of Education (ISCED) classification. However, to achieve larger group sizes, some ISCED groups were collapsed: All higher educational degrees (Bachelor's degree, Master's degree, PhD) were aggregated into one new variable for higher education; post-secondary, but not tertiary, was combined with short-cycle tertiary education into a new group called 'Post-Secondary.' The employment status has five categories: Full employment, part-time employment, in training, marginal employment, and not employment. Additionally, a dummy controls for self-employment. Migrants are coded as self-employed if they earned money through self-employment within the last year. The variable GDP is the GDP per capita of the country of origin measured in international dollars. The size of the migration population is the absolute number of first and second generation (i.e. either the migrants themselves or their parents were born outside of Germany) migrants living in Germany according to the German statistical office. Furthermore, there are three different distance measures in the model: The geographic distance between Berlin and the capital of the country of origin; the linguistic distance; the religious distance. Linguistic and religious distance is a measure that aims to quantify the degree of relatedness of the predominant religions and languages spoken between countries (Devleeschauwer et al. 2003). The variable 'EU' expresses if the migrant's country of origin is a member of the European Union. The variables income, migrant population, and geographic/linguistic/religious distance were log-transformed before their application in the models.

Method

The effects of life satisfaction on the intended permanent settlement rate is tested in a three-step process: first, the projected life satisfaction in the country of origin is estimated by calculating the counterfactual life satisfaction in the country of origin for the migrant residing in Germany. Next, the simulated life satisfaction and the difference to the life satisfaction in Germany on the intent to permanently settle are tested on the country level. In a third step, the life satisfaction variable's effect on intended settlement is analysed on the individual level.

How beneficial the environmental context in the country of origin is to the migrants, were they to return, is modelled by calculating the average life satisfaction of inhabitants from the country of origin with the same demographics as the migrants in Germany. This is done in two steps: First, the coefficients β for the demographic variables x (i.e. age, age-squared, gender, education, and religion²) and the dependent variable Y (i.e. life satisfaction (LS)) are calculated using data about individuals k residing within the country of origin j (i.e. Equation 1). Then, a counterfactual life satisfaction (LS) is predicted for the migrant i residing in Germany. Thereby, the previous estimated coefficients from the country of origin are combined with the demographic variables X of the migrant in Germany (i.e. Equation 2).

$$Y_{kj} = \widehat{\beta}_{0j} + \widehat{\beta}_{1j}x_{1kj} + \widehat{\beta}_{2j}x_{2kj} + \cdots + \widehat{\beta}_{nj}x_{nkj} + e_{kj}$$

Equation 1: Estimation of the parameters to predict the counterfactual.

$$\widehat{\beta}_{0j} + \widehat{\beta}_{1j}x_{1kj} + \widehat{\beta}_{2j}x_{2kj} + \cdots + \widehat{\beta}_{nj}x_{nkj} = \widehat{Y}_{jk}$$

Equation 2: Estimation of the counterfactual SWB for the country of origin.

For the country-level analysis, both the actual measure of life satisfaction in Germany and the predicted life satisfaction in the country of origin j are averaged.

After the life satisfaction in the country of origin has been simulated, the effect of life satisfaction maximisation on the propensity of intended return migration is analysed by comparing the life satisfaction of both Germany and the country of origin. To do so, the life satisfaction measures for Germany and the estimated life satisfaction for the country of origin are subtracted (i.e. $LS(Diff)$). This difference is used as an independent variable and the share of migrants from the country of origin with the intent to permanently stay as the dependent variable within an ordinary least square regression framework (Equation 3).

$$Y_j \left(\frac{\text{No. permanent stay}}{N_{total}} \right) = \widehat{\beta}_{0j} + \widehat{\beta}_{1j}LS(Diff)_j + e_j$$

Equation 3: Regression of settlement rate and the $LS(Diff)$ on the country level.

After the country-level analysis, a random intercept logistic regression model (RILR) is estimated to test the effect of life satisfaction on the individual level while controlling for a large array of individual- and country-level variables. The model is structured in two levels (person in country of origin).

$$lvl\ 1: \quad Ln \left(\frac{P(Y_{ij})}{1 - P(Y_{ij})} \right) = \widehat{\beta}_{0j} + \widehat{\beta}_{1j}x_{1ij} + \widehat{\beta}_{2j}x_{2ij} + \cdots + \widehat{\beta}_{nj}x_{nij} + \varepsilon_{ij}$$

$$lvl\ 2: \quad \widehat{\beta}_{0j} = \widehat{\pi}_{00} + \widehat{\pi}_{01}\alpha_{1j} + \widehat{\pi}_{02}\alpha_{2j} + \cdots + \widehat{\pi}_{0n}\alpha_{nj} + r_{0jk}$$

Equation 4: Two-level random intercept logistic regression (RILR)

The logit function of the outcome variable Y (i.e. intent to return) of the individual i from the country j is thereby estimated with the help of the independent variable on the individual level x and independent variables on the country (i.e. country of origin) level α . The coefficients are noted as β for the individual level and as π for the country level. The residuals in this model are referred to as ε for the individual level and r for the country level. The models estimated in this fashion will implement the previously calculated counterfactual life satisfaction in the country of origin as well as the life satisfaction difference drawn from that. The standard errors in this model are clustered around the grouping variable (i.e. country of origin).

Results

The findings section is twofold: first, the calculated differences in life satisfaction is reported, and second, the statistical association of life satisfaction differences and intended permanent settlement are shown.

Figure 1 plots the mean predicted life satisfaction in the country of origin and the mean life satisfaction of the migrants in Germany. The diagonal line is the line on which the life

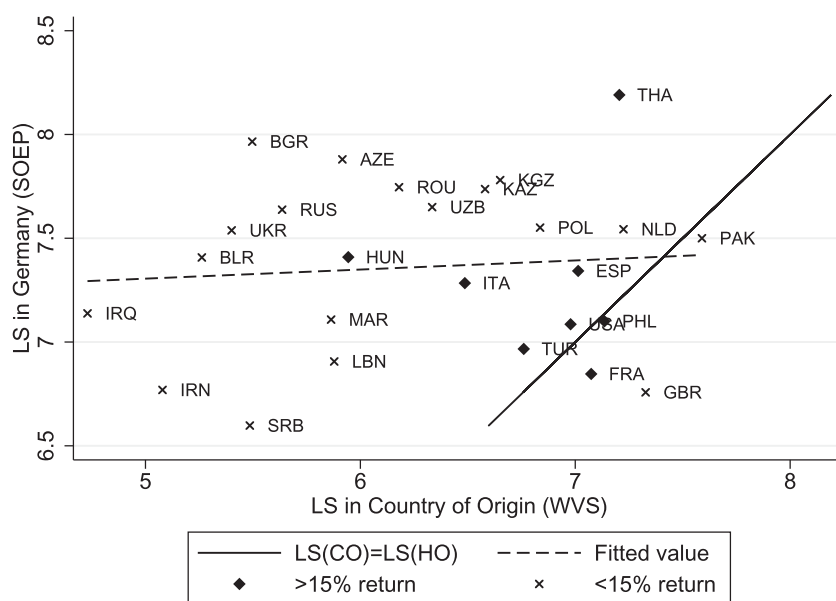


Figure 1. Comparison of LS in Germany and the Predicted LS in the Country of Origin.

Note: The country abbreviations follow the ISO3C country code; Turkey (TUR), Italy (ITA), Spain (ESP), France (FRA), United Kingdom (GBR), United States (USA), Romania (ROU), Poland (POL), Iran (IRN), Iraq (IRQ), Pakistan (PAK), Hungary (HUN), Bulgaria (BGR), Russia (RUS), Philippines (PHL), Thailand (THA), Morocco (MAR), Kazakhstan (KAZ), Lebanon (LBN), Kyrgyzstan (KGZ), Ukraine (UKR), Uzbekistan (USB), Netherlands (NLD), Azerbaijan (AZE), Belarus (BLR), Serbia (SRB).

satisfaction in Germany equals the predicted life satisfaction in the country of origin. Every dot above the line expresses an average life satisfaction higher than the average life satisfaction in the country of origin and vice versa. The dashed line in Figure 1 is the line of best fit. If this line were to be the same as the diagonal line, migration on average would not change the life satisfaction of a migrant at all. The fit line indicates no significant correlation between life satisfaction in the country of origin and the life satisfaction in Germany.³

The picture that emerges shows the same pattern as previous findings for Germany, the UK and Canada (Brockmann 2017; Helliwell et al. 2018). It has been shown that different immigrant groups with different life satisfaction in their country of origin converge around the national average (Helliwell et al. 2018). For Germany, the national average in 2014 according to the SOEP data is 7.4 (DIW 2015), the SWB of migrant groups (sorted by their origin country) seems to vary around this value and are, on average, slightly below the German average with a mean of 7.3 (the difference is not significant). This finding is in line with previous findings (see Brockmann 2017; Helliwell et al. 2018). However, one should be cautious when comparing the life satisfaction in the origin country with the life satisfaction in the host country, as life satisfaction is measured with two different surveys (i.e. SOEP and WVS) with different scales (that were harmonised) and different years in which they were taken. Furthermore, the migrant population is likely to differ systematically from the local population due to self-selection along unobserved variables. However, potential biases from the usage of two surveys and self-selection should affect all countries similarly and should thus not have a significant bias on

the life satisfaction gains/losses of countries *relative to each other* (which is what matters for the regression models).

It is important to point out that this paper does not take part in the empirical debate on whether international migration increases or decreases the SWB of migrants. For an overview of studies engaging in the debate on the effect of migration on the SWB of migrants, see Hendriks (2015).

In Figure 2, the percentage of migrants with intent to return to their country of origin is plotted against the life satisfaction difference on the country level. The graph is shown with a linear and a quadratic fit line. The country Thailand was dropped from the sample as it is considered an outlier. The plot in Figure A1 shows the graph including Thailand; if the country is considered, R^2 and the coefficient decreases (i.e. $R^2 = 0.31$; coefficient = -6.0). In the graph A2, the squared residuals and the leverage of each country from the model A1 are plotted against each other. This graph shows that Thailand is substantially above the model average in terms of squared residual. Thailand appears as a unique case with all 21 migrants being female. These Thai female migrants often enter Germany over their relationship with male German nationals (Sunanta 2014). It appears that these women hold a large desire to return to their country of origin. However, in further analyses, Thailand is included in the multilevel models to ensure that our results are not due to the sample selection.

The size of the circle in Figure 2 represents the group size of migrants from the respective country of origin. One can see that the aggregated life satisfaction difference on the country level works as a strong predictor of the share of the population with intention to stay in Germany. The R^2 of the linear model is 0.38. The coefficient between the life satisfaction difference and the percentage points with intent to return to their country of origin is -5.9 . Thus, according to the model, for every one unit the average life satisfaction in Germany exceeds the average predicted life satisfaction in the country of origin, 5.9% more of the immigrant population from that country of origin intend to return. In the model and sample at hand, the aggregated LS difference explains 38% of the variance in the rate of intended permanent stay between countries.⁴ The model fit increases to an R^2 of 0.47 if a quadratic rather than a linear fit is applied. The square of life satisfaction difference, when added as an additional variable to the linear regression

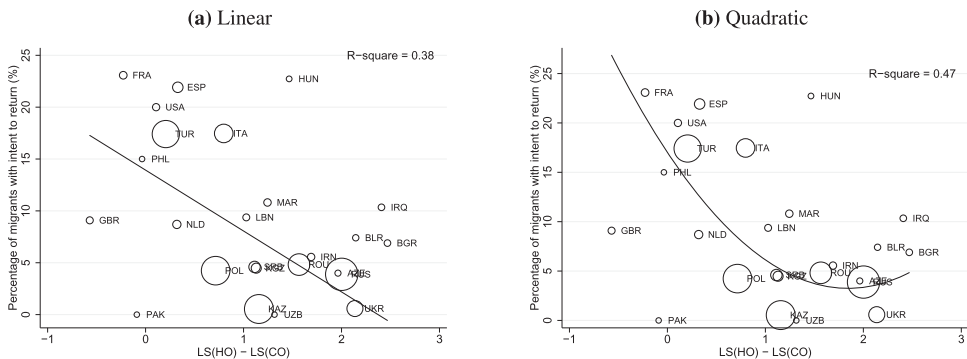


Figure 2. LS and cross-country differences in intended return migration: (a) linear and (b) quadratic. Note: Minimum group size of 20 migrants per country of origin (i.e. 25 countries); No Thailand.

between life satisfaction and share of return intention, is significant at a p -value of 0.071. This suggests that the average difference in life satisfaction between host and origin country may influence the return propensity in a quadratic rather than a linear manner. This quadratic fit could be explained by the normal distribution of life satisfaction differences within country groups. Under this normality assumption, the share of migrants that profit from return migration increases exponentially the bigger the mean life satisfaction difference of the groups become. However, this non-linear effect was not picked up in the multilevel models and, due to the small sample of 25 countries and the p -value of 0.071, the results bare some uncertainty and should be tested again in different contexts and larger samples. The model was also run after transforming the dependent variable with a logit function (see Figure A3). The R^2 in this model drops to 0.19. While the model fit in the logit model is smaller, the overall effect of life satisfaction differences remains significant.

Table 3. Average marginal effect (t -value) of Rdm. Intercept logistic models on likelihood of intended return.

	Model 1		Model 2		Model 3		Model 4	
SWB (Germany)	−0.022***	(−3.71)	−0.018***	(−3.70)				
SWB (CO)	0.023*	(2.48)	0.018*	(2.00)				
SWB difference					−0.025***	(−3.92)	−0.020***	(−3.92)
Demographic and migration								
Citizenship			−0.012	(−0.99)			−0.014	(−1.15)
Years in Germany			0.004	(0.66)			0.003	(0.44)
Age at immigration			−0.011	(−1.61)			−0.013*	(−2.05)
Aussiedler			−0.054**	(−2.88)			−0.054**	(−2.87)
Asylum			−0.026	(−1.15)			−0.026	(−1.16)
Child			−0.051***	(−4.11)			−0.050***	(−4.13)
Male			−0.000	(−0.04)			−0.001	(−0.05)
Married			0.013	(1.12)			0.013	(1.12)
Education and Labor Market								
Basic education			0.034	(1.55)			0.035	(1.62)
Ref.: Lower secondary edu.								
Upper sec. edu.			−0.003	(−0.19)			−0.001	(−0.05)
Post sec. edu.			−0.004	(−0.22)			−0.003	(−0.15)
Tertiary edu.			−0.018	(−1.15)			−0.013	(−0.91)
Ref.: Full emp.								
Part emp.			−0.004	(−0.26)			−0.004	(−0.25)
Training			0.017	(0.43)			0.020	(0.49)
Marginal emp			−0.000	(−0.02)			0.000	(0.00)
Unemployed			−0.007	(0.58)			0.008	(0.65)
Self-employment			−0.001	(−0.04)			−0.001	(−0.06)
Income (log std. adult)			−0.007+	(−1.85)			−0.007+	(−1.84)
Remittance (log)			0.002+	(1.68)			0.002+	(1.70)
Social ties (CO)			0.108***	(4.66)			0.107***	(4.69)
Country-level variables								
GDP (log)			0.040*	(2.33)			0.039*	(2.31)
Mig. population (log)			−0.009	(−0.54)			−0.008	(−0.49)
Geographic distance (log)			0.022	(1.43)			0.027+	(1.87)
Linguistic distance (log)			0.125**	(2.58)			0.116*	(2.49)
Religious distance (log)			−0.004	(−0.35)			−0.007	(−0.58)
EU			0.028	(0.93)			0.037	(1.27)
Observations	3696		3696		3696		3696	
B/C	1786.168		1890.99		1780.165		1884.055	

t statistics in parentheses.

+ $p < 0.1$, * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$.

The results of four multilevel models that test SWB differentials as predictors for intended return are shown in Table 3. Models 2 and 4 test the effect against a wide range of covariates. Models 1 and 2 aim to show the effect of the single components that make up the life satisfaction difference used in the final Model 4. Models 1 and 3 show the pure effect of the SWB variables without any control variables.

The life satisfaction difference is a highly significant predictor of return migration.⁵ For each unit difference in life satisfaction between Germany and the country of origin, the model predicts an average marginal 2.5% increase in the likelihood of holding return intentions. When the life satisfaction for migrants in Germany and their counterfactual in the country of origin are put in the model separately, their effects show opposing direction, as the theory would predict. With each unit increase in the SWB in Germany, the return propensity decreases on average by 2.3%, while for each unit increase in predicted SWB for the country of origin, the propensity increases by a 2.2% average. The results support hypothesis I. The effects of the explanatory variables are robust to changes to the covariates used or to restrictions on the group size of countries (see Table A4). Table A5 in the Appendix shows the results of Model 2 with and without the SWB variables included. Overall, no large significant changes can be observed. Thus the SWB variables and the control variables appear to be mostly independent.

The effect of GDP is significant and stable, with migrants from high GDP countries intending to return more frequently than migrants do from low GDP countries. A number of reasons why migrants are more willing to return to higher developed countries such as labour market conditions and infrastructure related issues (i.e. schools, hospitals, etc.) can be thought of. The geographic distance between country of origin and Germany is not robust, but changes substantially with the inclusion or exclusion of different variables, due to a mediation with other variables such as EU, GDP, LS (CO), and religious and linguistic distance. If geographic distance is included by itself, no effect can be found. Similarly linguistics shows a positive but not robust (to the variables included) effect on return intentions.

Migrants that have entered Germany as Aussiedler or have children show a robust negative effect on the likelihood of holding return intentions. The low-intended return rates of Aussiedler might be explained by the discrimination many of those considered ethnic Germans (especially the older generations) experienced in the UDSSR in the time after World War II. The reduction in return intentions of migrants with children can be explained by the reduced mobility of parents, who take the well-being of their children into account. It has been suggested that under certain circumstances return migration may negatively influence the well-being of children (see Cena, Heim, and Tran-dafoiu 2018).

While migrants with children are less mobile and therefore more likely to stay, no significant effect of labour market attachment can be found. This might seem surprising in that labour market attachment also limits the migrant's mobility. However, the effect of labour market attachment might be ambivalent. On the one hand, migrants with a job in Germany might be less willing to leave that job and return to an uncertain career in the origin country, on the other hand migrants without a job might have too little resources for a successful return or are bound to Germany as they rely on the German welfare system. The last significant and robust effect of a control variable is social ties to the origin country. Migrants that have social ties to the origin country are more

likely to hold return intentions. This finding is in line with the transnational perspective which argues that such ties directly facilitates return intentions. Remittance also increases return intentions but are strongly mediated by social ties. However, remittance seems to show an additional effect on return intentions within a 90 percent confidence interval. This observation is in line with the NELM theory, which hypothesises that migrants send remittance to prepare for their return (see Dustmann 2003). No effect of the size of the migrant population in Germany or if the origin country is part of the EU was found.

In the next step the effect of LS(CO) and LS(HO) on return intentions are tested on different subsamples: (1) Migrants that send remittance to the country of origin; (2) Migrants that do not send remittance to the country of origin; (3) Migrants with social ties to the country of origin; (4) Migrants without social ties to the country of origin; (5) Migrants that have lived in Germany for less than 17 years; (6) Migrants that have lived in Germany for more than 17 years (17 years is the median time migrants in the sample had been in Germany). The first four subsamples reflect the existence of different measures of social connection to the origin country (i.e. H2). The split sample in terms of time spent in Germany is thereby a reflection of the assumption that migrants grow more distant from their origin country over time (i.e. H3). Testing the effect of LS (CO) on these samples is used to test the hypothesis (i.e. H2, H3) in regard to the transnational perspective. Some samples reflect a high transnational connection (i.e. 1, 3, 5) while the other samples reflect a lower transnational connection (i.e. 2, 4, 6).

The results in Table 4 show that the effect of life satisfaction in the origin country can only be observed for migrants that have social ties to their origin country or are among the bottom half in terms of years spend in Germany (i.e. less than 17 years). The effect of LS (CO) is also significantly larger for migrants that send remittance relative to those who don't. We interpret this as proof for the transnational hypothesis H2 and H3: Individuals with transnational ties are better life satisfaction maximisers due to their lower cost of returning and their better level of information (H2). Furthermore, transnational ties seem to erode over time (H3). In terms of the effect of LS(Germany) on return intentions the results are less clear. While the effect is significantly larger for migrants that send remittance, the opposite is true for migrants with social ties and a relatively short stay in Germany.

To account for the heterogeneous sample of migrants, the effects were tested on their robustness by excluding various groups. Table A8 shows the results for the main model of interest M4 after dropping EU Migrants, Asylum Seekers, Settlers (i.e. Aussiedler), Migrants from Turkey, low income, high income, low education, high education and neighbouring countries. Furthermore, we dropped the five countries where the measured

Table 4. Model 1 without top and bottom quartile of time spend in Germany.

	Remittance	No remittance	Social ties (CO)	No social ties (CO)	Under 17 yr. (HC)	Over 17 yr. (HC)
SWB (Germany)	−0.555*** (−3.75)	−0.206** (−3.07)	−0.291*** (−4.52)	−0.425 (−1.93)	−0.148 (−1.53)	−0.366*** (−4.74)
SWB (CO)	0.469* (1.99)	0.293** (2.59)	0.279* (2.53)	0.105 (0.32)	0.354** (2.75)	0.190 (1.25)
Observations	610	3086	2824	872	1933	1935

t statistics in parentheses.

* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$.

life satisfaction from the World Value Survey and the Gallup Poll differed the most (i.e. Pakistan, Uzbekistan, Philippines, Kyrgyzstan, Turkey) (see Figure A4 for a comparison between LS in Gallup and WVS; Figure A5 for the fit of the sample when the five countries are excluded). The results remain robust, which indicates that the results are not driven by measurement errors in the country of origin.

Conclusion

We analysed the relationship between the life satisfaction of migrants and their intent to return to their country of origin. In this regard, the predictive capabilities of the average difference in life satisfaction between Germany and the country of origin were tested. The results show that differences in life satisfaction explain 38% of cross-country variation in the rate of intended return when applying a linear fit and 47% when applying a quadratic fit. For each unit that the life satisfaction in Germany exceeded the life satisfaction in the country of origin, ~6% fewer migrants intend to return to their country of origin, according to the linear model. This is a rather large effect when considering that on average migrants of the sample intended to return in only 8% of the cases. The model fit of the country-level model is remarkably good as well (i.e. $R^2 = 0.38$ for the linear model and $R^2 = 0.47$ for the quadratic fit) when considering the small group size of some country groups (i.e. 20) and the imperfections of the prediction.⁶ These results are especially interesting regarding the debate on whether return migration is due to failure or success. As laid out, subjective utility measure is driven by the extent to which the individuals' subjective expectations were either met or disappointed. The degree to which loss in life satisfaction can explain cross-country return intentions can be interpreted as the degree to which disappointed expectations drive return intentions. According to our estimations, around 38%–47% (depending on the assumed fit) of cross-country return intention can be explained by unmet expectations.

Further analysis on the micro level was performed by employing a multilevel, random intercept logit model. In these multilevel models as well, life satisfaction (whether in Germany or the country of origin) is a strong predictor of return intentions, and it remained significant even after more traditional independent variables of migration were included. However, the effect of life satisfaction in the country of origin seems to be driven by migrants with strong transnational ties.

Overall, the results on the micro- and macro-levels propose that return migration is a strategy of utility/well-being maximisation. This finding could formally only be shown indirectly by demonstrating that return propensity correlates with certain factors that determine an individual's utility such as social connections (Constant and Zimmermann 2012) or the socio-economic and working conditions (Paparusso and Ambrosetti 2017). The finding that the average life satisfaction of stayers (in the country of origin) with the same demographics as the migrant works as a robust predictor of return intentions suggests that migrants are well aware of the living situation waiting for them in their country of origin.

The results of this study have implications for researchers and policy makers. Policy makers should be aware that while high economic development may attract migrants (Docquier, Peri, and Ruysen 2014), it is the quality of life in the host country that makes them stay. Combining a high-income economy with low levels of life satisfaction for migrants could therefore lead to high turnover rates of immigrants. Conversely,

host countries whose migrants have a high life satisfaction could benefit from a higher level of intended permanent stay, which could speed up the integration process. Furthermore, the process of life satisfaction maximisation will lead to a self-selection process due to which migrants in the host country will increase their average life satisfaction over time. Life satisfaction has been shown to have an effect on various forms of social participation and productivity (Thoits and Hewitt 2001; Oswald, Proto, and Sgroi 2015). The life satisfaction driven self-selection could therefore function as a supportive force in the integration process. Source countries on the other hand can attract back members of their diaspora by investing in their quality of life. This is especially important as most typical emigration countries tend to be much poorer than the typical host countries. Thus source countries that find it difficult to compete with the host countries of their diaspora on an economic level could opt to invest directly in the life satisfaction of the demographic group it tries to win back.

The results are interesting for further research for multiple reasons: While results of the effect of life satisfaction on out-migration have been inconclusive, strong evidence for return migration can be found. This might suggest that it is in fact a wrong expectation that leads to the inconclusive results of life satisfaction and out-migration. Under the assumption that migrants are aware of what awaits them in their country or origin, these expectations can more easily be included in the case of return migrant as the expectations can be modelled after the realities in the country of origin. The results show that life satisfaction is a useful measure to analyse return migration behaviour. Finally, the paper shows that the large cross-country differences in return migration rates can be explained by significant differences in life satisfaction within the various countries of origin.

Notes

1. Croatia is seen as a good proxy to the Serbian linguistic and religious culture because the main language of both countries counts to the family of South Slavic languages and the population of both countries is overwhelmingly of Christian denomination.
2. To do so, the education variables as well as the religion variables in the two datasets (SOEP and WVS) had to be harmonized. The harmonization can be seen in the appendix Tables A1 and A2.
3. A possible effect of LS(CO) on the LS(HO) was also tested on the country level as well as within a multilevel set up. No effect was found.
4. If the pure average LS in the country of origin is taken (instead of the average of the counterfactual), R^2 decreases to 0.27. The root mean square error increases to 5.97 compared to 5.5.
5. No effect of polynomials of the LS variable was found.
6. The counterfactual life satisfaction in the country of origin has to be understood as the best estimation of the data available. The life satisfaction was predicted solely based on the demographics (age, age squared, gender, education, religion), allowing for significant variation around the prediction.

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