

Chapter 11

The Happy Migrant? Emigration and its Impact on Subjective Well-Being



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11.1 Introduction

Leaving their old home and settling in a new place is an event that could be accompanied by far reaching changes in individuals' life courses (cf. Williams and Baláž 2012). Presumably people decide to move when they expect an improvement in living conditions. This should particularly be the case when people migrate to other countries. And indeed, emigration is, for example, often accompanied by a gain in wages and income (see Witte and Guedes Auditor 2021 in this volume). However, objective gains of migration are possibly counterbalanced through certain costs that may accompany migration. In this sense, costs primarily not only refer to financial expenses for traveling and moving. There are also immaterial costs of adaptation as emigrants have to accustom themselves to a new neighbourhood and probably unfamiliar habits and customs (see Stawarz et al. 2021 in this volume). They also have to face the challenge of leaving old friends and family members behind (see Mansfeld 2021 in this volume).

Against this background of possible gains and losses that could be accompanied by emigration, this chapter asks about the impact of migration on individuals' subjective well-being (SWB). SWB can be understood as an overall indicator of the condition and state an individual is in. Therefore, SWB is, among other things (e.g. wages, living standard, occupational status, health), a suitable measure of the individual consequences of migration (cf. Preston and Grimes 2019; Shamsuddin and Katsaiti 2019). It is therefore not surprising that in recent years there has been a strong increase in research regarding the SWB of migrants (see Simpson 2013 for

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an overview). Although our knowledge has grown rapidly in this field, research on SWB as an outcome of international migration is still in its beginnings. With the German Emigration and Remigration Panel Study (GERPS), new possibilities emerge enabling us to make innovative contributions with the potential to learn more about the interrelations between migration and SWB. We combine the emigration sample of GERPS with a sample of internationally non-mobile Germans provided by the Socio-Economic Panel Study (SOEP) and use propensity score matching methods and difference-in-difference analyses to learn more about possible causal effects of migration on SWB, measured by overall self-reported satisfaction with life in general.

The chapter proceeds as follows: First, we present some theoretical considerations and give a brief overview of the state of research. Second, we describe the data and methods used in our analyses. Then we present our findings. The chapter ends with a summary of the main results and a discussion of the resulting consequences and challenges for future research in the light of certain limitations.

11.2 Theoretical Considerations and State of Research

Changes in employment, income, or family status that occur in the course of migration are important outcomes of international mobility processes. However, cognitive and affective well-being, expressed in satisfaction and emotions are at least equally important as objective living conditions. Following the social production function (SPF) theory (cf. Lindenberg and Frey 1993; Ormel et al. 1999), people strive to increase or at least to maintain their overall SWB as the ultimate aim of life. At the same time, we know that SWB is unequally distributed along certain individual socio-demographic and socio-economic characteristics. Previous empirical research has repeatedly shown that SWB (mostly measured as cognitive subjective well-being, as in this article) is correlated with age (cf. Blanchflower and Oswald 2008; Brockmann 2009; Brüderl et al. 2019; Easterlin 2006), employment status (cf. Lucas et al. 2004; Winkelmann and Winkelmann 1998), income (cf. Blanchflower and Oswald 2000; Shields and Price 2005), or skill level (cf. Dolan et al. 2008). There is also evidence for a correlation between SWB and personality traits (cf. Lucas and Diener 2015). In addition, international comparisons provided evidence that differences in culture and institutions can also have an impact on individuals' SWB (Diener et al. 2003; Haller and Hadler 2006; Veenhoven 2009).

There has been a lengthy debate over how certain life events or external shocks affect SWB (see Headey et al. 2010 and Plagnol 2010 for an overview). Some authors claim that there is an individual baseline SWB, which could be temporarily disturbed but that will be reached again after a certain period of adaptation ("set point theory"). Indeed, there is evidence that some life events cause temporary changes in SWB (e.g., marriage, death of a partner, birth of a child). However, the set point theory has been criticised as a number of studies have found that there are certain life events (e.g., the death of a child, chronic diseases) that cause

long-lasting permanent changes in SWB (for a literature review, see Headey et al. 2013). In sum, it has become evident that certain life events can lead to long-lasting changes in SWB, while other events do not (for a meta-analysis on SWB and the adaptation of life events, see Luhmann et al. 2012).

Although the number of papers dealing with SWB in the course of migration has recently increased (see Simpson 2013 for a literature review), evidence on the correlation between international migration and SWB is still limited and shows ambiguous results. Even though there are different possible theoretical scenarios on how SWB could evolve in the course of migration (Erlinghagen 2016), there is no clear evidence of which of those scenarios fits best. As a result, it cannot be said whether emigration has temporary or long-lasting effects on SWB if at all yet. Safi (2010) and Bartram (2010) find migrants to have lower life satisfaction levels compared to natives in the receiving country. However, Erlinghagen et al. (2009) found no difference between the life satisfaction of emigrants and the non-mobile population (“stayers”) at the time of migration, whereas Baykara-Krumme and Platt (2018) even found an increased SWB among Turkish emigrants compared to stayers in Turkey. Several authors provided evidence that satisfaction levels differ according to immigrant’s place of origin (Amit 2010; Bartram 2010). There is also some initial evidence that the life satisfaction of emigrants increases when the periods before and after emigration are compared (Erlinghagen et al. 2009). This is in line with recent methodically more complex analyses on the development of life satisfaction in the process of internal mobility in Germany (Fuchs-Schündeln and Schündeln 2009; Melzer and Muffels 2012; Erlinghagen et al. 2019), in Sweden (Switek 2016), the United Kingdom (Nowok et al. 2013; Nowok et al. 2018), and Australia (Preston and Grimes 2019). Moreover, compared to people who remained in their home country, life satisfaction of emigrants seems to even increase along with the time they have lived abroad (Erlinghagen 2011; Bartram 2013). Given these scarce and ambiguous results, it remains unclear whether there is a (causal) effect of migration on SWB. Therefore, the following analyses can be understood as an explorative enterprise to shed more light on this under-investigated phenomenon. Besides new interesting results on how SWB is influenced by migration, the chapter also shows the potential of GERPS to investigate the development of SWB in the course of migration in more depth.

11.3 Data and Methods

Our analyses rely on the first wave of GERPS covering German citizenship between 20 and 70 years (see Ette et al. 2021 in this volume). Because we are interested in the causal relationship between migration and SWB and in order to avoid positively biased results, we restrict our sample to individuals who emigrated in the years 2017 and 2018. First, the original GERPS emigrant sample was drawn based on our sample members having declared their migration during the years 2017 and 2018 by notifying their local registration office. However, there is obviously a small and

selective group of original sample members who officially declared their emigration during that period even though they actually lived abroad for a much longer time for unknown reasons. The second reason for restricting our analytic sample is that we expect biased results if we would leave emigrants in our sample who emigrated years or even decades ago but still live abroad. It can be hypothesised that unsatisfied emigrants have a higher remigration propensity, which leads to a positive bias regarding the average SWB of emigrants because unsatisfied emigrants are more likely to have already returned home when GERPS started and are therefore not observed in our sample. In addition, we rely only on data from emigrants who emigrated for the first time to make sure that our results are indeed related to their recent migration and are not influenced by past emigration experiences. Furthermore, we exclude all observations with missing values in any of the variables we rely on in our analyses. Under these conditions we include 1193 first-time emigrants in our investigations.

Empirical research on the causal relationship between migration and SWB have to take into account that both SWB and the individual migration decision itself are influenced by socio-economic and socio-demographic determinants as well as by certain context factors. Therefore, any analysis that aims for a better understanding of causal relationships between migration and SWB has to take this selectivity into account. To avoid biased results and to determine whether migration has a causal impact on the development of SWB, we need information about non-mobile individuals (“stayers”) as a reference group to obtain an appropriate counterfactual. For this purpose we combine GERPS with data from the German Socio-Economic Panel Study (SOEP) (Goebel et al. 2019). We use the currently available SOEP data from 2016 and 2017 (version v34) and include stayers who provided information about their current life satisfaction to match the GERPS emigrant sample. Furthermore, the stayer sample is, like GERPS, limited to individuals with German citizenship between the ages of 20 and 70 years. Moreover, we excluded individuals who reported a residential move of a distance of more than 20 km during the two years before 2016. Under these conditions, we include SOEP data from 13,171 stayers in our analyses.

11.3.1 Methods

In social sciences, empirical investigations of causal relationships are a very ambitious enterprise (Hedström and Ylikoski 2010). Because of ethical as well as practical reasons, data acquisition in laboratory experiments is often considered an unsuitable strategy in the social sciences (cf. Hooghe et al. 2010; Levitt and List 2007; but see Falk and Heckman 2009). Therefore, as social scientists we could at best rely on quasi-experimental longitudinal data that allows a one-to-one comparison of two groups of individuals. One group faces a certain experience or event (“treated”) whereas the other group does not (“untreated”). Such quasi-experiments require that individuals are assigned to these two groups entirely at random. Under

these conditions, difference-in-difference (DID) calculations can be made to identify possible treatment effects (Lechner 2011). However, quasi-experimental data is actually rare because it is often produced as a kind of by-product of policy programs or administrative procedures. Thus, the collection of quasi-experimental data is mostly process-produced and therefore not knowledge-driven as it is not primarily induced due to or motivated by certain research questions. This is why certain alternative methods have been developed within the social sciences allowing us to determine possible treatment effects by using data from standard population surveys to build “quasi-counterfactuals” (Contini and Pusch 2018). Data from population surveys have the advantage that their content suits certain research questions better because their collection was knowledge-driven and customised for researchers’ interests and needs.

These methods include DID models relying on propensity score matching (PSM) estimations, which are applied to create a control group that is fully comparable, based on observables, with the treatment group (Caliendo and Kopeinig 2008). The propensity score is a balancing score including a function of the observed covariates, which displays a conditional probability of the assignment to the treatment (Gangl 2010; Gangl and DiPrete 2004; Morgan and Winship 2015; Rosenbaum and Rubin 1983; Winship and Sobel 2001). PSM matches all treatment and control cases with (nearly) the same propensity score as a kind of “virtual twins” (Foster et al. 2011) for the calculation of the average treatment effect. The advantage of the propensity score is that it reduces the dimensionality of matching on a single dimension (Abadie and Imbens 2016; Blundell et al. 2005).

Multiple studies have reported self-selection of emigrants by education and income (Borjas 1987, 1991; Borjas et al. 2018; Chiquiar and Hanson 2005; Pary et al. 2017). We implement PSM to account for this self-selection by adapting the sample of the stayers to the emigrants through several observable characteristics. PSM allows us to estimate the average difference in the SWB of emigrants’ net of the average SWB they would have experienced had they remained in Germany. We conduct not only an overall analysis comparing the SWB of emigrants and stayers; since it is argued that different subgroups differ in their emigration motives (see Ette and Erlinghagen 2021) we compare men and women, individuals with and without academic degrees as well as German citizens with and without foreign roots.

For analysing the treatment effect of emigration on life satisfaction, we decided to implement PSM with a nearest neighbour matching algorithm with caliper radius option (tolerance level of the maximum PS distance imposed at 0.01) because it outperformed the other algorithms in balancing observables (Gebel 2010). We use nearest neighbour with replacement and five neighbours to decrease potential bias in particular if the propensity score distribution is different between treatment and control. Moreover, where appropriate we use the trimming procedure to define the common support region where both groups have a positive density within each propensity score (Caliendo and Kopeinig 2008).

11.3.2 Variables

In GERPS and in SOEP, SWB is measured by asking the participants to rate their current overall life satisfaction on an eleven-point scale from ‘0’ (completely dissatisfied) to ‘10’ (completely satisfied). The related question at the very end of the questionnaire is: “In conclusion, we would like to ask you about your satisfaction with your life in general. How satisfied are you with your life, all things considered?” For PSM we use matching variables that were measured identically in both datasets (see Table 11.1 for descriptives). We include time constant socio-demographic variables, namely gender, year of birth, and migration background (German vs. non-German roots). Because of differences in personality traits between migrants and stayers (see Lübke et al. 2021 in this volume), we include the self-rated risk attitude as a further matching variable measured on an eleven-point scale from ‘0’ (“not at all willing to take risks”) to ‘10’ (“very willing to take risks”). This self-reported measure has proven to be a valid indicator of risk attitude strongly connected to actual individual behaviour (Dohmen et al. 2011; Mata et al. 2018) and it is “moderately stable over time and sufficiently persistent to be considered an individual trait” (Schildberg-Hörisch 2018, p. 142).

To match stayers observed in SOEP data with emigrants observed in GERPS, we rely on SOEP data from 2016 and GERPS emigrants’ retrospective information regarding their living conditions three month before they left Germany to ensure that we are really measuring a treatment effect of emigration on SWB. Besides time-invariant characteristics like gender, age, migration background (“foreign roots”), and risk appetite, we also use the following variables as matching variables in the PSM procedure:

- Educational level, measured as a condensed CASMIN classification with five categories: (1) no degree, (2) no vocational training, (3) lower secondary, intermediate or higher secondary, (4) tertiary degree finished in the university of applied sciences, and (5) tertiary degree finished in college and higher
- Employment status, measured in eight categories: (1) employed, (2) self-employed, (3) civil servant, (4) unemployed, (5) retired, (6) in education and training, (7) not employed, and (8) other
- Household status, measured in eight categories: (1) one person household, (2) couple without children, (3) single parent, (4) couple with children younger than 17 years, (5) couple with children older than 16 years, (6) couple with children younger as well as older than 16 years, (7) multiple generation-household, and (8) other combination

Table 11.1 provides descriptive findings on the distribution of SWB and on the distribution of our matching variables for first-time emigrants as well as for stayers. The emigrants are highly selective regarding their education and much younger than stayers. Additionally, emigrants are willing to take more risks. Most of the emigrants live alone or in a relationship without any children and a slightly higher proportion have a migration background (“foreign roots”).

Table 11.1 Summary descriptive statistics (mean/proportion)

Variables	First time emigrants		Stayers	
	Mean	SD	Mean	SD
Life satisfaction	7.9	(1.6)	7.2	(1.7)
Female	48%	–	50%	–
Age	35.7	(11.2)	47.8	(13.2)
Migration background	19%	–	13%	–
Risk-appetite (0–10)	5.8	(2.2)	4.8	(2.3)
<i>Employment status</i>				
Employed	61%	–	60%	–
Self-employed	6%	–	7%	–
Civil servant	2%	–	6%	–
Unemployed	3%	–	5%	–
Retired	3%	–	13%	–
In education & training	17%	–	4%	–
Not employed	4%	–	5%	–
Other	4%	–	–	–
<i>Education</i>				
No degree	0%	–	1%	–
No vocational degree	10%	–	10%	–
Lower secondary and vocational training	2%	–	22%	–
Intermediate/higher secondary and vocational training	26%	–	41%	–
Tertiary (university of applied sciences)	20%	–	9%	–
Tertiary (college)	42%	–	17%	–
<i>Household status</i>				
One-person household	46%	–	22%	–
Couple without children	23%	–	34%	–
Single parent	3%	–	6%	–
Couple with children <16 years	10%	–	18%	–
Couple with children >= 16 years	1%	–	15%	–
Couple with children <16 and >= 16 years	1%	–	4%	–
Multiple generation household	–	–	1%	–
Other combination	16%	–	1%	–
<i>N</i>	1193		13,171	

Sources: GERPSw1, SOEP2017, authors' calculations. Standard deviation in parentheses

11.4 Findings

Figure 11.1 displays the distribution of life satisfaction of the emigrants and the stayers. In both groups, the distribution is skewed to the right. However, and as already seen in Table 11.1, the emigrants are on average more satisfied with their lives than the non-migrants. We have to ask if this difference in SWB is really a result of emigration or if this result only reflects selectivity effects caused by different group compositions between emigrants and stayers. To answer this question, we

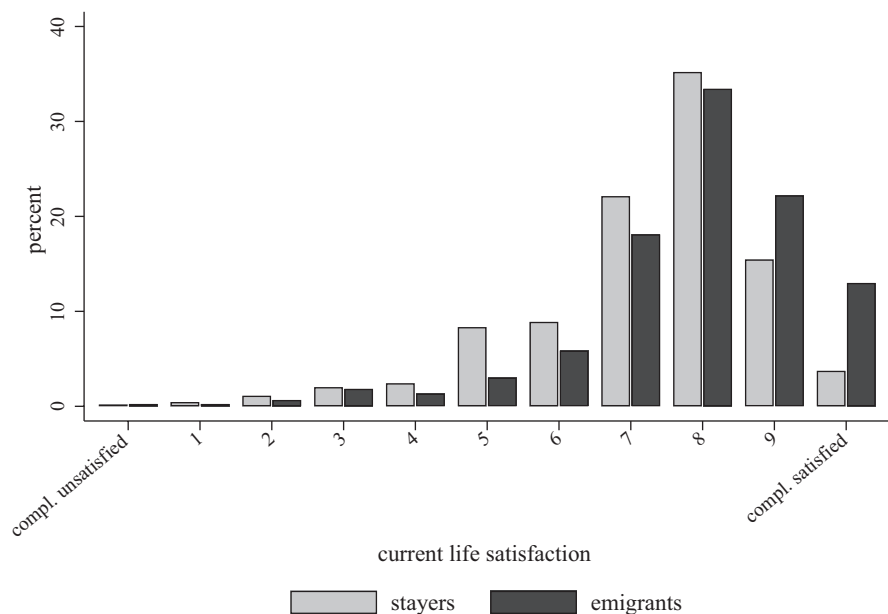


Fig. 11.1 Distribution of life satisfaction of emigrants and stayers. (Sources: GERPSw1, SOEP2017, authors’ calculations)

Table 11.2 Average Treatment Effect (ATT) of emigration on SWB

Emigrants		Stayers		Not in common support		
N	SWB	N	SWB	N	ATT	se
1145	7.9	13,157	7.4	48	0.5	0.08***

Sources: GERPSw1, SOEP2017. Based on nearest neighbour (5) matching with caliper radius (propensity score 0.01) and trimming (propensity score ≤ 0.7)

* $p < 0.05$, ** $p < 0.001$, *** $p < 0.001$

conduct PSM and estimate the mean differences between the emigrants (treated) and non-mobile stayers (untreated). Table 11.2 presents the results of this procedure as Average Treatment Effects (ATT) under the assumption that the PSM approach allows causal inference. It turns out that emigration increases SWB significantly. Compared to stayers, emigration increases SWB on average by 0.5 points (or 7 percent) on the underlying 11-point-scale.

Table 11.3 provides the ATT for several subgroups. It turns out that emigration leads to a significant increase in SWB regardless of gender or educational degree. However, the size of the treatment effect varies between an average increase of 0.3 (or $0.3/7.5 = 4\%$) for women to 0.7 (or 10%) for lesser-educated individuals with no academic degree. The only exceptions are German first-time emigrants with migration backgrounds (“foreign roots”). In this group, we do not find any treatment effect on SWB. In contrast, SWB of Germans without foreign roots increases significantly by 0.6 points (or 8 percent) due to emigration (Table 11.3).

Table 11.3 Average Treatment Effect (ATT) of emigration on SWB for different subgroups

	Emigrants		Stayers		Not in common support	ATT	se
	N	SWB	N	SWB	N		
Males	569	7.9	5904	7.3	48	0.7	0.10***
Females	525	7.8	7253	7.5	51	0.3	0.10**
No academic degree	393	7.9	8740	7.2	23	0.7	0.11***
Academic degree ^a	754	7.9	4416	7.5	23	0.4	0.10***
No migration background	917	7.9	11,088	7.3	51	0.6	0.09***
Migration background	203	7.6	2069	7.4	22	0.2	-0.18

Based on nearest neighbour (5) matching with caliper radius (propensity score 0.01) and trimming (propensity score ≤ 0.7) except ^aWithout caliper radius and trimming to guarantee better covariance balancing test. Sources: GERPSw1, SOEP2017

* $p < 0.05$, ** $p < 0.001$, *** $p < 0.001$

11.5 Conclusions

This chapter asks about possible causal effects of migration on SWB, measured here by overall life satisfaction. By combining the German Emigration and Remigration Panel Study (GERPS) with a quasi-counterfactual sample of internationally non-mobile Germans provided by the Socio-Economic Panel Study (SOEP) and based on propensity score matching, the difference-in-difference analyses show that emigration is actually accompanied by an increase in SWB. Compared to non-mobile German stayers, first-time emigrants with German citizenship show a significant increase in SWB shortly after arrival in their host country. It becomes obvious that although migration is accompanied by certain economic and social costs, German first-time emigrants perceived this important event of settling in another country as positive and life enhancing. On a broader perspective, this finding underscores that emigration from a highly developed, democratic welfare state like Germany is foremost a voluntary decision and driven by opportunities and not by threats. For most emigrants, migration may not only pay off with respect to wages or income (see Witte and Guedes Auditor 2021 in this volume) but also with regard to life satisfaction.

However, the meaningfulness of the evidence presented is restricted by a number of limitations. For the analyses presented it was impossible to identify whether the increase of migrants' SWB is really a direct effect of migration or if it is caused by changes of employer, an increase in income, family-related events (like a marriage or family reunion), or a change in housing quality that could simultaneously arise in the course of moving from Germany to another country. Because of this shortcoming it is not possible to explain why the SWB of German first-time movers with foreign roots do not increase whereas all other inspected emigrant subgroups (male, female, no university degree, university degree and Germans without foreign roots) profit from a gain in SWB. Perhaps the emigration of Germans with foreign roots is accompanied by different experiences in the course of migration over a lifetime, which results in a diverging development of SWB compared to other subgroups.

Moreover, the presented analyses assume that there is no anticipation of SWB during a period in which emigrants prepare to leave the country. However, the few existing studies on the development of migrants' SWB prior to migration produce at least partly ambiguous results. It is possible that emigrants' SWB had already increased as they prepared for their international move while still living in Germany. Erlinghagen et al. (2019) found some evidence for an increase in SWB prior to internal moves in Germany. By contrast, Erlinghagen (2016) found some evidence for a decrease in SWB one to two years before emigration from Germany. Nowok et al. (2013), Nowok et al. (2018) as well as Preston and Grimes (2019) also find a similar drop in SWB prior to migration for internal moves in Britain and Australia. In that case it seems doubtful whether our quasi-counterfactual comparison with stayers is appropriate because such stayers by definition cannot face any anticipation effect of SWB and thus would not be an adequate reference group.

Moreover, it is possible that optimism and happiness are personality traits that foster individual emigration decisions. In that case, the higher SWB of emigrants compared to stayers could be an artefact and may be caused by unobserved heterogeneity between these two groups that has not yet been sufficiently captured by the matching variables we used in the presented models. And finally, it remains unclear to what extent the presented results can be assigned to emigrants from other developed welfare states besides Germany. The few existing studies on migrants' SWB have produced ambiguous results for different nationalities and originating contexts so far. It remains unclear if such ambiguities really reflect context differences or if they are statistical artefacts caused by data limitations or methodically inappropriate research strategies.

Despite these limitations, this chapter has certainly improved our knowledge of the under-investigated relationship between migration and SWB. The chapter indicates that as a consequence of international mobility, individual SWB seems to increase in the course of emigration. Interestingly, there are no gender- or education-related differences. With regard to education this could be because emigrants benefit from their international mobility per se. As Witte and Guedes Auditor (2021) show, emigrants of all skill levels realise considerable increases in their wages after arrival. However, the result that there are no gender differences in SWB after migration is more surprising because women have a higher propensity to be the trailing partner and report psychological burdens caused by emigration more often. Female emigrants in stable relationships report a decrease in overall life satisfaction as well as an increase in perceived social isolation after migration (Erlinghagen 2021 in this volume). But this does not necessarily mean the results are contradictory. For one thing, the analyses by Erlinghagen (2021) concentrate on a specific group of emigrants living in stable relationships throughout the migration process. In addition, whereas Erlinghagen (2021) relies on emigrants' self-reported comparisons of their current SWB with their retrospective, remembered SWB shortly before migration, we conducted a quasi-counterfactual DID analyses relying on actual observed SWB measures of stayers and emigrants. Our chapter has not only provided new evidence with regard to the development of SWB in the course of migration. Maybe even more importantly, it gives rise to further questions that have to be addressed by future research and that could rely on information from upcoming waves of GERPS.

Appendix

Tables 11.4 and 11.5 illustrate whether the matching procedure was successful in pairing emigrants and stayers and reports the summarized mean standardized bias before and after matching for different matching algorithm. They clearly show that each algorithm is able to reduce the standardized bias (Table 11.4). However, only for the nearest neighbour approaches with five neighbours is the bias reduced below the threshold of 5%, which is considered to be sufficient to balance the difference between the treatment and control group (Caliendo and Kopeinig 2008).

Table 11.5 shows the impact of matching on the distribution of the covariates as well as on the propensity score. The change of the propensity score before and after matching indicates that the assignment to the treatment (being emigrant instead of non-migrant) occurs now quasi-randomly because the values are almost the same. In the end, we decided to choose the nearest neighbour (5) with the radius caliper (0.01) and trim option (0.7) because this procedure also reduces the mean standardized bias for each covariate below 5% (see Table 11.5). Therefore, we suggest that remaining differences in life satisfaction between emigrants and stayers should be a function of the emigration event.

Table 11.4 Mean standardized bias before and after matching

Gaussian kernel		Nearest neighbour (1)		Nearest neighbour (5)		Nearest neighbour (5) ^a	
Before	After	Before	After	Before	After	Before	After
46.5	5.4	46.5	8.1	46.5	2.3	46.5	2.2

^aNearest neighbour matching imposes a radius caliper of 0.01 and trimming option on 0.7. Sources: GERPSw1, SOEP2017, authors' calculations

Table 11.5 Covariate balancing: Mean differences before and after matching, nearest neighbour (5) radius caliper (0.01) with trim option on 0.7

		Treated	Control	Bias (%)	Reduction in bias
Propensity Score	Unmatched	0.41	0.05	162	
	Matched	0.39	0.38	0.2	99.9
Female	Unmatched	0.48	0.55	-13.7	
	Matched	0.49	0.48	2.8	80
Age	Unmatched	35.67	47.52	-99.9	
	Matched	35.95	36.04	-0.7	99.3
Migration background	Unmatched	0.19	0.16	8.3	
	Matched	0.19	0.21	-4.6	45.1
Risk-appetite (index)	Unmatched	5.84	4.76	45.6	

(continued)

Table 11.5 (continued)

		Treated	Control	Bias (%)	Reduction in bias
	Matched	5.78	5.87	-4.3	90.6
Employment status ^a					
Self-employed	Unmatched	0.06	0.07	-4.4	
	Matched	0.06	0.07	-3.5	21.3
Civil servant	Unmatched	0.03	0.06	-16.3	
	Matched	0.03	0.04	-4.5	72.4
Unemployed	Unmatched	0.03	0.05	-8.1	
	Matched	0.03	0.03	3.7	54.7
Retired	Unmatched	0.03	0.05	-8.1	
	Matched	0.03	0.03	-0.8	97.7
Education & training	Unmatched	0.17	0.04	44.8	
	Matched	0.16	0.16	-0.5	98.9
Not employed	Unmatched	0.04	0.06	-9.1	
	Matched	0.04	0.04	1	89
Other	Unmatched	0.03	0.003	22.8	
	Matched	0.02	0.02	-1.6	93.1
Education (CASMIN)	Unmatched	4.81	4.03	61.1	
	Matched	4.78	4.74	3	95
Household status ^b					
One-person household	Unmatched	0.46	0.12	81.5	
	Matched	0.47	0.49	-4.2	94.8
Couple, no child	Unmatched	0.23	0.29	-14.7	
	Matched	0.24	0.22	3.1	79.3
Single parent	Unmatched	0.03	0.09	-24	
	Matched	0.04	0.03	0.4	98.5
Couple, child(ren) <=16 years	Unmatched	0.1	0.28	-47.1	
	Matched	0.1	0.1	1.9	95.9
Couple, child(ren) >16 years	Unmatched	0.01	0.12	-46	
	Matched	0.01	0.02	-2.4	94.9
Couple, child(ren) <=16 years & > 16 years	Unmatched	0.01	0.08	-37.9	
	Matched	0.01	0.01	-2	94.6
Other combination	Unmatched	0.16	0.01	54.5	
	Matched	0.14	0.13	2.2	96

The variables age² and age³ are included in the calculation but not presented. "Bias (%)" denotes the standardized percentage bias. Sources: GERPSw1, SOEP2017, authors' calculations

^aReference is "employed"

^bReference is "multiple generation household"

References

- Abadie, A., & Imbens, G. W. (2016). Matching on the estimated propensity score. *Econometrica*, 84(2), 781–807.
- Amit, K. (2010). Determinants of life satisfaction among immigrants from Western countries and from the FSU in Israel. *Social Indicators Research*, 96(3), 515–534.
- Bartram, D. (2010). Economic migration and happiness: Comparing immigrants' and natives' happiness gains from income. *SSRN Electronic Journal*.
- Bartram, D. (2013). Happiness and 'economic migration': A comparison of Eastern European migrants and stayers. *Migration Studies*, 1(2), 156–175.
- Baykara-Krumme, H., & Platt, L. (2018). Life satisfaction of migrants, stayers and returnees: reaping the fruits of migration in old age? *Ageing and Society*, 38(4), 721–745.
- Blanchflower, D., and Oswald, A. (2000). Well-being over time in Britain and the USA. *NBER Working Paper No. 7487*.
- Blanchflower, D., & Oswald, A. (2008). Is well-being U-shaped over the life cycle? *Social Science & Medicine*, 66(8), 1733–1749.
- Blundell, R., Dearden, L., & Sianesi, B. (2005). Evaluating the effect of education on earnings: models, methods and results from the National Child Development Survey. *Journal of the Royal Statistical Society*, 168(3), 473–512.
- Borjas, G. J. (1987). Self-selection and the earnings of immigrants. *The American Economic Review*, 77(4), 531–553.
- Borjas, G. J. (1991). Immigration and self-selection. In J. M. Abowd & R. B. Freeman (Eds.), *Immigration, trade and the labor market* (pp. 29–76). Chicago: University of Chicago Press.
- Borjas, G. J., Kauppinen, I., & Poutvaara, P. (2018). Self-selection of emigrants: Theory and evidence on stochastic dominance in observable and unobservable characteristics. *The Economic Journal*, 129(617), 143–171.
- Brockmann, H. (2009). Why are middle-aged people so depressed? Evidence from West Germany. *SSRN Electronic Journal*.
- Brüderl, J., Kratz, F., & Bauer, G. (2019). Life course research with panel data: An analysis of the reproduction of social inequality. *Advances in Life Course Research*, 41, 100247.
- Caliendo, M., & Kopeinig, S. (2008). Some practical guidance for the implementation of propensity score matching. *Journal of Economic Surveys*, 22(1), 31–72.
- Chiquiar, D., & Hanson, G. H. (2005). International migration, self-selection, and the distribution of wages: Evidence from Mexico and the United States. *Journal of Political Economy*, 113(2), 239–281.
- Contini, B., & Pusch, T. (2018). Identifying bounded rationality with panel data: evidence from the labor markets of Italy and Germany. *Mind & Society*, 17(1–2), 71–84.
- Diener, E., Oishi, S., & Lucas, R. E. (2003). Personality, culture, and subjective well-being: emotional and cognitive evaluations of life. *Annual Review of Psychology*, 54, 403–425.
- Dohmen, T., Falk, A., Huffman, D., Sunde, U., Schupp, J., & Wagner, G. G. (2011). Individual risk attitudes: measurement, determinants and behavioral consequences. *Journal of the European Economic Association*, 9(3), 522–550.
- Dolan, P., Peasgood, T., & White, M. (2008). Do we really know what makes us happy? A review of the economic literature on the factors associated with subjective well-being. *Journal of Economic Psychology*, 29, 94–122.
- Easterlin, R. A. (2006). Life cycle happiness and its sources: Intersections of psychology, economics, and demography. *Journal of Economic Psychology*, 27(4), 463–482.
- Erlinghagen, M. (2011). Nowhere better than here? The subjective well-being of German emigrants and remigrants. *Comparative Population Studies*, 36(4), 899–926.
- Erlinghagen, M. (2016). Anticipation of life satisfaction before emigration: Evidence from German Panel data. In T. Tachibanaki (Ed.), *Advances in happiness research. A comparative perspective* (pp. 229–244). Tokyo: Springer.

- Erlinghagen, M. (2021). Migration motives, timing, and outcomes of internationally mobile couples. In M. Erlinghagen, A. Ette, N. F. Schneider, & N. Witte (Eds.), *The global lives of German migrants. Consequences of international migration across the life course*. Cham: Springer.
- Erlinghagen, M., Kern, C., & Stein, P. (2019). *Internal migration, social stratification and dynamic effects on subjective well-being*. Berlin: DIW.
- Erlinghagen, M., Stegmann, T., & Wagner, G. G. (2009). Deutschland ein Auswanderungsland? *DIW Wochenbericht*, 39(2009), 663–669.
- Ette, A., Décieux, J. P., Erlinghagen, M., Guedes Auditor, J., Sander, N., Schneider, N. F., & Witte, N. (2021). Surveying across borders: The experiences of the German emigration and remigration panel study. In M. Erlinghagen, A. Ette, N. F. Schneider, & N. Witte (Eds.), *The global lives of German migrants. Consequences of international migration across the life course*. Cham: Springer.
- Ette, A., & Erlinghagen, M. (2021). Structures of German emigration and remigration: Historical developments and demographic patterns. In M. Erlinghagen, A. Ette, N. F. Schneider, & N. Witte (Eds.), *The global lives of German migrants. Consequences of international migration across the life course*. Cham: Springer.
- Falk, A., & Heckman, J. J. (2009). Lab experiments are a major source of knowledge in the social sciences. *Science*, 326(5952), 535–538.
- Foster, J. C., Taylor, J. M. G., & Ruberg, S. J. (2011). Subgroup identification from randomized clinical trial data. *Statistics in Medicine*, 30(24), 2867–2880.
- Fuchs-Schündeln, N., & Schündeln, M. (2009). Who stays, who goes, who returns?: East-West migration within Germany since reunification. *The Economics of Transition*, 17(4), 703–738.
- Gangl, M., and DiPrete, T. A.. 2004. Kausalanalyse durch Matchingverfahren. *DIW Berlin Discussion Papers*.
- Gangl, M. (2010). Nichtparametrische Schätzung kausaler Effekte mittels Matchingverfahren. In C. Wolf & H. Best (Eds.), *Handbuch der sozialwissenschaftlichen Datenanalyse* (pp. 931–961). Wiesbaden: VS Verlag.
- Gebel, M. (2010). Early career consequences of temporary employment in Germany and the UK. *Work, Employment and Society*, 24(2), 641–660.
- Goebel, J., Grabka, M. M., Liebig, S., Kroh, M., Richter, D., Schröder, C., & Schupp, J. (2019). The German socio-economic panel (SOEP). *Jahrbücher für Nationalökonomie und Statistik*, 239(2), 345–360.
- Haller, M., & Hadler, M. (2006). How social relations and structures can produce happiness and unhappiness: An international comparative analysis. *Social Indicators Research*, 75(2), 169–216.
- Headey, B., Muffels, R., & Wagner, G. G. (2010). Long-running German panel survey shows that personal and economic choices, not just genes, matter for happiness. *Proceedings of the National Academy of Sciences of the United States of America*, 107(42), 17922–17926.
- Headey, B., Muffels, R., & Wagner, G. G. (2013). Choices which change life satisfaction: Similar results for Australia, Britain and Germany. *Social Indicators Research*, 112(3), 725–748.
- Hedström, P., & Ylikoski, P. (2010). Causal mechanisms in the social sciences. *Annual Review of Sociology*, 36(1), 49–67.
- Hooghe, M., Stolle, D., Mahéo, V.-A., & Vissers, S. (2010). Why can't a student be more like an average person?: Sampling and attrition effects in social science field and laboratory experiments. *The Annals of the American Academy of Political and Social Science*, 628(1), 85–96.
- Lechner, M. (2011). The estimation of causal effects by difference-in-difference methods. *Foundations and Trends in Econometrics*, 4(3), 165–224.
- Levitt, S. D., & List, J. A. (2007). What do laboratory experiments measuring social preferences reveal about the real world? *Journal of Economic Perspectives*, 21(2), 153–174.
- Lindenberg, S., & Frey, B. S. (1993). Alternatives, frames, and relative prices: a broader view of rational choice theory. *Acta Sociologica*, 36(3), 191–205.
- Lübke, C., Décieux, J. P., Erlinghagen, M., & Wagner, G. G. (2021). Comparing the risk attitudes of internationally mobile and non-mobile Germans. In M. Erlinghagen, A. Ette, N. F. Schneider,

- & N. Witte (Eds.), *The global lives of German migrants. Consequences of international migration across the life course*. Cham: Springer.
- Lucas, R. E., Clark, A. E., Georgellis, Y., & Diener, E. (2004). Unemployment alters the set point for life satisfaction. *Psychological Science, 15*(1), 8–13.
- Lucas, R. E., & Diener, E. (2015). Personality and subjective well-being: Current issues and controversies. In M. Mikulincer, P. R. Shaver, M. Lynne Cooper, & R. J. Larsen (Eds.), *APA handbook of personality and social psychology, Volume 4: Personality processes and individual differences* (pp. 577–599). Washington, DC: American Psychological Association.
- Luhmann, M., Hofmann, W., Eid, M., & Lucas, R. E. (2012). Subjective well-being and adaptation to life events: a meta-analysis. *Journal of Personality and Social Psychology, 102*(3), 592–615.
- Mansfeld, L. (2021). Out of sight, out of mind? Frequency of emigrants' contact with friends in Germany and its impact on subjective well-being. In M. Erlinghagen, A. Ette, N. F. Schneider, & N. Witte (Eds.), *The global lives of German migrants. Consequences of international migration across the life course*. Cham: Springer.
- Mata, R., Frey, R., Richter, D., Schupp, J., & Hertwig, R. (2018). Risk preference: A view from psychology. *Journal of Economic Perspectives, 32*(2), 155–172.
- Melzer, S. M., & Muffels, R. J. (2012). *Migrant's pursuit of happiness: The impact of adaption, social comparison and relative deprivation; evidence from a "natural" experiment*. Berlin: DIW.
- Morgan, S. L., & Winship, C. (2015). *Counterfactuals and causal inference: Methods and principles for social research*. New York: Cambridge University Press.
- Nowok, B., Findlay, A., & McCollum, D. (2018). Linking residential relocation desires and behaviour with life domain satisfaction. *Urban Studies, 55*(4), 870–890.
- Nowok, B., van Ham, M., Findlay, A. M., & Gayle, V. (2013). Does migration make you happy? A longitudinal study of internal migration and subjective well-being. *Environment and Planning A: Economy and Space, 45*(4), 986–1002.
- Ormel, J., Lindenberg, S., Steverink, N., & Verbrugge, L. M. (1999). Subjective well-being and social production functions. *Social Indicators Research, 46*(1), 61–90.
- Parey, M., Ruhose, J., Waldinger, F., & Netz, N. (2017). The selection of high-skilled emigrants. *The Review of Economics and Statistics, 99*(5), 776–792.
- Plagnol, A. (2010). Subjective well-being over the life course: Conceptualizations and evaluations. *Social Research: an international quarterly of the social sciences, 77*(2), 749–768.
- Preston, K., & Grimes, A. (2019). Migration, gender, wages and wellbeing: Who gains and in which ways? *Social Indicators Research, 144*(3), 1415–1452.
- Rosenbaum, P. R., & Rubin, D. B. (1983). The central role of the propensity score in observational studies for causal effects. *Biometrika, 70*(1), 41–55.
- Safi, M. (2010). Immigrants' life satisfaction in europe: Between assimilation and discrimination. *European Sociological Review, 26*(2), 159–176.
- Schildberg-Hörisch, H. (2018). Are risk preferences stable? *Journal of Economic Perspectives, 32*(2), 135–154.
- Shamsuddin, M., & Katsaiti, M.-S. (2019). Migration and happiness: Evidence from Germany. *Journal of Happiness Studies, 21*, 2931. online first.
- Shields, M. A., & Price, S. W. (2005). Exploring the economic and social determinants of psychological well-being and perceived social support in England. *Journal of the Royal Statistical Society: Series A (Statistics in Society), 168*(3), 513–537.
- Simpson, N. (2013). Happiness and migration. In A. Constant & K. F. Zimmermann (Eds.), *International handbook on the economics of migration* (pp. 393–408). Cheltenham: Edward Elgar.
- Stawarz, N., Ette, A., & Rüger, H. (2021). Healthy migrants? Comparing subjective health of German emigrants, remigrants and non-migrants. In M. Erlinghagen, A. Ette, N. F. Schneider, & N. Witte (Eds.), *The global lives of German migrants. Consequences of international migration across the life course*. Cham: Springer.
- Switek, M. (2016). Internal migration and life satisfaction: Well-being paths of young adult migrants. *Social Indicators Research, 125*(1), 191–241.

- Veenhoven, R. (2009). Well-being in nations and well-being of nations. *Social Indicators Research*, 91(1), 5–21.
- Williams, A. M., & Baláz, V. (2012). Migration, risk, and uncertainty: Theoretical perspectives. *Population, Space and Place*, 18(2), 167–180.
- Winkelmann, L., & Winkelmann, R. (1998). Why are the unemployed so unhappy? Evidence from panel data. *Economica*, 65(257), 1–15.
- Winship, C., and Sobel, M. E. (2001). *Causal inference in sociological studies*: Mimeo.
- Witte, N., & Guedes Auditor, J. (2021). Affluent lives beyond the border? Individual wage change through migration. In M. Erlinghagen, A. Ette, N. F. Schneider, & N. Witte (Eds.), *The global lives of German migrants. Consequences of international migration across the life course*. Cham: Springer.

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