

Erlinghagen, Marcel; Kern, Christoph; Stein, Petra

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## Migration, social stratification, and dynamic effects on subjective well-being

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# Migration, Social Stratification, and Dynamic Effects on Subjective Well-Being

Marcel Erlinghagen, Christoph Kern, Petra Stein

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German Socio-Economic Panel (SOEP)  
DIW Berlin  
Mohrenstrasse 58  
10117 Berlin, Germany

Contact: [soeppapers@diw.de](mailto:soeppapers@diw.de)



# Internal Migration, Social Stratification and Dynamic Effects on Subjective Well-being

Marcel Erlinghagen\*      Christoph Kern†      Petra Stein‡

**Abstract:** Using German panel data and relying on internal relocation, this paper investigates the anticipation and adaptation of subjective well-being (SWB) in the course of migration. We hypothesize that SWB correlates with the process of migration, and that such correlations are at least partly socially stratified. Our fixed-effects regressions show no evidence of any anticipation of SWB before the event of migration, but a highly significant and sustained positive adaptation effect. In general, internal migration seems to lead to a long-lasting increase in SWB. This is found to be the case for almost all analyzed socioeconomic and socio-demographic subgroups. The migration distance, the reasons for migration, and the individuals' socio-demographic characteristics do not appear to have any important effects on the overall observed pattern. Our results suggest that regional mobility is less a response to certain stressors, but is, rather, a response to an opportunity to improve job- or housing-related living conditions, and that these improved conditions are reflected in individuals' SWB. Thus, migration under these circumstances is triggered by opportunities rather than by constraints.

*Keywords:* Subjective well-being, migration, relocation, life course, adaptation, anticipation

## 1 Introduction

As in other fields of social science research, it has been shown that in research on migration, the concept of the life course (cf. Elder 2003; Mayer 2009) is well suited to addressing most of the relevant questions regarding the important determinants and consequences of this process (cf. Mulder and Hooimeijer 1999; Geist and McManus 2008; Kley 2011; Wingens et

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\*University of Duisburg-Essen, marcel.erlinghagen@uni-due.de

†University of Mannheim, c.kern@uni-mannheim.de

‡University of Duisburg-Essen, petra\_stein@uni-due.de

al. 2011). Within the life course framework, it is possible to investigate causal relationships between changes in certain living conditions, life course events, and life course periods that trigger migration, as well as patterns of residential relocation. In other words, the life course approach enables migration researchers to investigate the complex anticipation and adaptation processes migrants face in the course of their migration process. Up to now, most existing research on this topic has dealt with questions regarding changes in objective living conditions like income, employment status, family status, or the housing situation (see, for example, Böheim and Taylor 2002, 2007; Clark and Ledwith 2006; Geist and McManus 2008; Flippen 2014; Lübke 2015), whereas recent work begins to shift the focus onto subjective determinants and consequences of migration (see section 2.2). However, relatively little is known about the anticipation and adaptation of overall subjective well-being (SWB) during the migration process of heterogeneous groups of migrants. To help fill this gap, we investigate in this paper the anticipation and adaptation of SWB in the course of migration (i.e., changes in SWB before and after the migration event) across various socioeconomic and socio-demographic subgroups. We ask whether and, if so, how SWB develops prior to as well as after the event of migration. Do we find certain patterns of anticipation of SWB before people move? Are there certain patterns of adaptation of SWB after people have arrived in their new home? And – most importantly – are there socially stratified differences in individuals’ experiences of such anticipation and adaptation processes?

By seeking to answer these questions, we hope to not only learn more about the interrelationship between SWB and migration, but also to improve our knowledge about the migration process itself. If the anticipation of SWB correlates with the process of migration, and if such correlations are at least partly socially stratified, this information could help to disentangle the time-dependent relationship between the preceding migration decision and the actual event of moving. Moreover, gaining new insight into the adaptation of SWB after migration can help us better understand which migrants might benefit or suffer as a consequence of their decision to move. This requires us to integrate at least three different strands of research: (1) within a life course framework, (2) questions regarding the development of SWB have to be combined with (3) existing findings and hypotheses on the social stratification of migration and moving. Furthermore, to investigate the development of SWB during the migration process empirically, we need panel data that cover the life course of migrants over a sufficient period of time before and after the migration event. For our analyses, we focus on internal migration in Germany and draw upon data from the German Socio-Economic Panel (SOEP), which is one of the leading databases used in international research on SWB (see, for example, Fujita and Diener 2005; Lucas 2005; Clark et al. 2008; Headey 2010).

Research on internal migration in Germany has indicated that long-distance migration in Germany could be broadly characterized as a rare event (1.2% of the German population aged 25–64 changed their residence across NUTS-2 borders in 2003, OECD 2005) and that Germans are more likely to move for family or housing reasons than for job-related reasons (Caldera Sanchez and Andrews 2011). In addition, moving rates have been shown to vary significantly between different subgroups of the German population, e.g. with respect to age and qualification level (Hunt 2004, 2006; Mai 2007). Migration rates in Germany have also been found to vary by employment status (Windzio 2004; Fuchs-Schündeln and Schündeln 2009) occupational status (Haas 2000), income (Windzio 2004; Melzer 2010), ethnic background (Şaka 2013; Schündeln 2014), and psychological factors (Bauernschuster

et al. 2012; Jäger et al. 2010). While several studies have observed that various socio-structural conditions (as well as life course events; Kley 2011) can provide substantial incentives for internal migration, it has also been shown that local “ties” and regional embeddedness are associated with a lower propensity to migrate. Thus, home owners and individuals with dense local networks and long housing and job tenures have been found to be less likely to move in the German context (e.g., Kley 2011; Windzio 2004; Boenisch and Schneider 2010).

We proceed our paper by outlining the theoretical background and the state of research on subjective well-being in the course of (internal) migration in section 2. In section 3, the data and methods are introduced. In section 4, we present the findings of the empirical investigations. Section 5 provides a summary and discussion of our results.

## **2 Theoretical Background and the State of Research**

### **2.1 Migration, SWB, and the Life Course**

In recent years, migration research has been increasingly influenced by the life course approach. This means that individual migration is now generally understood as being a life course process. The life course approach emphasizes that migration is not a single event of moving across a pre-defined border, but is, rather, a longer term process of decision-making, execution, and integration. This process is influenced by the migrant’s experiences in earlier life course stages, as well as by dynamic changes in both individual and contextual determinants. In addition, mutual interdependencies between the life courses of interacting individuals (“linked lives”) are also thought to explain individual migration decisions and behavior (cf. Mulder and Hooimeijer 1999; Geist and McManus 2008; Kley 2011; Wingens et al. 2011; Coulter and Scott 2015).

In this paper, we analyze intra-personal changes in SWB during the migration process. Relying on social production function (SPF) theory (cf. Lindenberg and Frey 1993; Ormel et al. 1999), we posit that subjective well-being is a very suitable indicator of the individual perception of migration as a success or failure, or as a win or a loss, over time. We assume that SWB does not depend as directly on contextual factors as, for example, income or health does. A decline in income after migration need not coincide with an individual loss if, for example, the living costs in the destination area (rents, food prices, etc.) are significantly lower than in the migrant’s home region. Objective health indicators like doctor visits could also be affected by changes in the medical infrastructure. Therefore, we think SWB is a more appropriate indicator for analyzing the determinants and the consequences of the migration process on an intra-personal comparative basis. Thus, we intend to analyze the anticipation of SWB before the event of migration, and the adaptation of SWB after the event of migration. This approach overcomes the artificial divisions commonly found in life course-related migration research (decision or preparation vs. integration or assimilation) by enabling us to conduct a more holistic analysis of the migration process.

## 2.2 Subjective Well-being in the Course of the Migration Process

Migration research has long been examining the question of whether housing or neighborhood dissatisfaction is a stressor (cf. Wolpert 1966) that triggers the desire to move (cf. Speare 1974; Landale and Guest 1985; Lu 1998; Clark and Ledwith 2006) or the actual moving behavior (cf. Bach and Smith 1977; Michelson 1977; Newman and Duncan 1979; Landale and Guest 1985; Clark and Ledwith 2006), with ambiguous results. While these studies on residential mobility failed to take overall life satisfaction or SWB into account, a number of studies on international migration have investigated the connection between the intention to migrate and SWB (see Ivlevs 2015), or the link between the actual event of emigration and the SWB of emigrants after moving (for a literature review, see Simpson 2013). The results of these studies are also ambiguous: some have shown that migrants have lower life satisfaction levels than the natives in the destination country (Safi 2010; Bartram 2011), and that satisfaction levels differ according to the immigrant's place of origin (Baltatescu 2007; Amit 2010; Bartram 2011), whereas Erlinghagen et al. (2009) found no difference in the life satisfaction levels of emigrants and stayers at the time of migration. Furthermore, Baykara-Krumme and Platt (2016) found that SWB was higher among Turkish migrants than among stayers. 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). Moreover, there seems to be a positive correlation between the life satisfaction of emigrants and how long they have lived abroad relative to the life satisfaction of people who remained in their home country (Erlinghagen 2011; Bartram 2013).

However, this existing work analyzed the relationship between migration and housing satisfaction or life satisfaction in a static way only, i.e., using cross-sectional data or a very short dynamic perspective, such as satisfaction in the year before or after moving. Against this background, it is worth noting that in recent years researchers have become increasingly interested in what Dolan and White (2006) have called the process of "dynamic well-being". Thus, the number of papers that have analyzed the anticipation and the adaptation processes with regard to certain life events has been growing. Many of these studies have attempted to prove the so-called "set point theory", which posits "that adult individuals have differing but stable levels of SWB, levels substantially due to personality traits and other factors which are partly hereditary or determined early in life" (Headey 2010: 8; see also Clark et al. 2008). There is evidence that some life events cause only temporary changes in SWB (e.g., marriage, death of a partner, birth of a child). However, the set point theory has been challenged, 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 changes in SWB (for a literature review, see Headey et al. 2013). In sum, it has become evident that certain life events 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).

Against this background, a number of papers investigated the development of SWB in the course of the migration process. In the German context, Fuchs-Schündeln and Schündeln (2009) found no anticipation effect for migrants moving from East to West Germany, while SWB increased after migration for those who did not return to East Germany within three years after the first move. Melzer (2011) – similar to Melzer and Muffels (2012) – reported

positive and long lasting effects of East-West migration on SWB for both men and women. Focusing on the development of SWB before the migration event, Erlinghagen (2016) found a U-shaped pattern of anticipation prior to emigration from Germany. Wolbring (2017) observed a similar anticipation pattern for housing satisfaction of migrants within Germany, followed by a steady decline of satisfaction in the years after the move. The latter results contrasted the findings of Nakazato et al. (2011), who found no evidence of adaption effects, but a long lasting increase in housing satisfaction for migrations who moved within Germany for house-related reasons. Using British panel data, Nowok et al. (2013) found a U-shaped pattern of anticipation of SWB up to one year before migration, followed by a recovery of SWB. They concluded that “migration takes place as a result of increasing stress (up to a certain threshold). Moving to overcome the stressor is therefore a positive action but it does not bring any additional happiness or improved well-being relative to the migrant’s status before the stressor took effect” (Nowok et al. 2013: 995; see also Frijters et al. 2011). Their results further indicated that comparing migrants by gender or moving distance hardly affects the observed SWB trajectory. In a follow-up study, Nowok et al. (2018) investigated anticipation and adaption with respect to satisfaction in various life domains and found a strong and enduring positive effect of moving on housing satisfaction, which was particularly pronounced for migrants with a sustained desire to move and for moves that constitute transitions from rented apartments to home ownership. Using Swedish panel data, Switek (2016) observed long lasting positive effects of moving on SWB particularly for individuals who moved for work related reasons, indicating that the development of SWB in the course of migration is moderated by migrants’ characteristics.

## 2.3 Development Scenarios

In recent decades, research on subjective well-being has mainly been conducted by psychologists, economists, and, to a lesser extent, cultural sociologists. Thus, research has been dominated by questions regarding the anticipation or the adaptation of satisfaction to certain life events, the general relationship between overall life satisfaction and domain satisfaction, and whether and, if so, how subjective well-being is shaped by the individual’s personality or the cultural context (for an overview, see Diener et al. 2003 and Delhey and Dragolov 2014). However, in the recent past the number of papers analyzing the question of whether and, if so, to what extent subjective well-being is stratified by class, gender, or educational status is on the rise (Bellani and D’Ambrosio 2011; Kroll 2011; Hochman and Skopek 2013; Bedin and Sarriera 2015; Diego-Rosell et al. 2018; Gardarsdottir et al. 2018; Lee & Cagle 2018).

Although mainly interested in the connection between migration and SWB we understand our paper also as a contribution to the growing research on social inequality and SWB. Thus, we assume that the development of SWB as an individual determinant and as an outcome of migration varies across subgroups, because migration conditions and motives have been shown to differ between subgroups of migrants. Landale and Guest (1985: 202) pointed out that “resources such as time, money, and knowledge of opportunities contribute to the mobility of dissatisfied individuals. Constraints such as home ownership, commitments to the immediate locale, and a lack of financial ability impede the mobility of those who would prefer to move.” However, the link between the development of SWB as an expression of



the individual conditions of migration, migration motives, and social stratification has not previously been analyzed.

Given the current state of research, is not yet possible to formulate explicit hypotheses about the complex correlation between the migration process and the development of SWB. Therefore, the following analyses primarily have an explorative character. We can, however, formulate some broader hypotheses about the fundamental relationships between, on the one hand, migration motives and conditions and socio-demographic and socio-economic characteristics, and, on the other hand, the development of SWB in the course of the migration process. To start with, we can identify five ideal-typical basic patterns of the development of SWB during the individual migration process (see Figure 1):

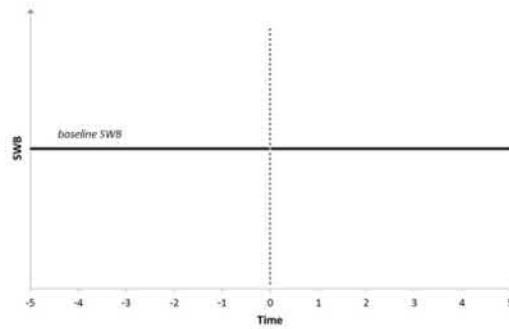
- In scenario 1 (“no impact scenario”), SWB remains at the individual baseline level throughout the whole migration process, there is no adaptation or anticipation of SWB.
- Scenarios 2 and 3 are two different types of “sustained change scenarios”. In these scenarios, SWB remains significantly higher or lower than baseline SWB after the event of migration. While in scenario 2 there is no anticipation of SWB prior the event of migration, in scenario 3 there are two different anticipation processes. Thus, in scenario 3, we might assume that the development of life satisfaction is hump-shaped, with an increase during the incubation period, followed by a decrease during the preparation period (black line in scenario 3). This could be the case if the individual’s initial interest in emigrating develops slowly, and, during this process, she starts to look forward to the positive experiences she anticipates having after migration that might lead to an increase in life satisfaction. However, after she makes the final decision, the early phase of dreaming is over. A stressful and exhausting process of preparation and planning may follow this phase. During this period and up to the event of migration, the individual may experience a reduction in life satisfaction. We can, however, also imagine that there is a U-shaped relationship between life satisfaction and the process of emigration (gray line in scenario 3). In this case, life satisfaction would decline until the individual finally makes the decision to migrate, and would then increase in the subsequent period, up to the point at which she leaves her home region. In the latter case, the individual might be suffering as a result of her living conditions, which could lead not only to a decline in satisfaction, but also to a decision to leave her home. After this migration decision has been made, the individual might have a feeling of relief, and may therefore experience constantly increasing levels of satisfaction during the preparation period that follows.
- Scenarios 4 and 5 are two types of “set point scenarios”. Compared to the two previously mentioned “sustained change scenarios”, these scenarios are the same with respect to the anticipation of SWB during the period before the migration event, but are very different with respect to the adaptation of SWB. In these scenarios, SWB eventually returns to baseline SWB (“set point”) after having temporarily increased or decreased because of migration.

Whether life events actually lead to sustained changes in SWB seems to depend on the characteristics of the life event itself. If the event is the starting point of a permanent

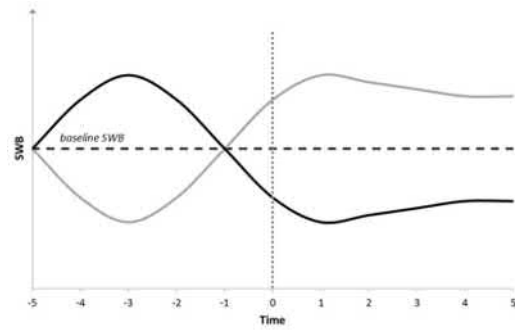
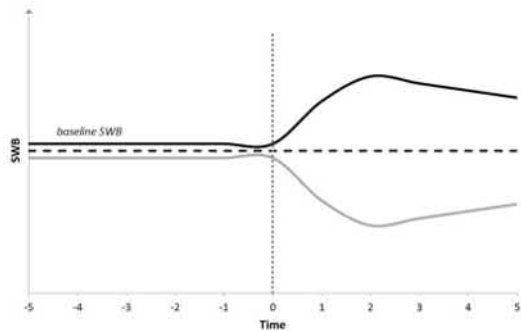
change in status, like being diagnosed with a chronic disease, then a sustained change in SWB is likely to occur (Easterlin 2005; Headey et al. 2013). However, it is difficult to determine which status changes will lead to a permanent or only a temporary change in the individual's perceptions as a consequence of the related event, and, thus, to a permanent or a temporary change in the individual's SWB. People can adapt to unfavorable living conditions or can fully recover from traumatic experiences like the death of a partner (Clark et al. 2008). In addition, as people can anticipate future good or bad events, their SWB may change years before the actual event takes place (Clark et al. 2008; Gerstorf et al. 2010). The question therefore arises of whether and, if so, how migrants' SWB changes as they anticipate and adapt to the event of migration. Is migration a permanent or only a temporary status change in the subjective perceptions of the migrants themselves? Is it an event with positive or negative connotations? In addition to adapting after moving, do migrants anticipate the event of leaving home? To address these issues, we are particularly interested in analyzing the relationship between moving conditions (moving reasons, moving distance, municipality size, and regional context) and the anticipation and the adaptation of SWB. With respect to regional context, e.g., we expect to find differences in the link between SWB and internal migration between western and eastern German migrants that are related to their different migration motives and needs. We then examine possible differences in the development of SWB during the migration process depending on gender, age, educational level, income, migration background, and personality traits.

Figure 1: Ideal-typical scenarios of the development of SWB in the migration process

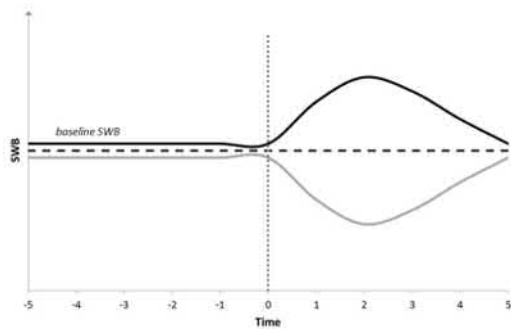
(a) Scenario 1 (“no impact scenario”)



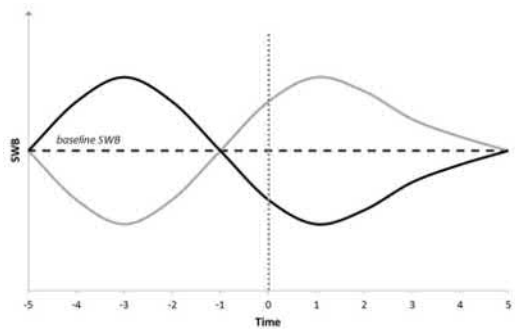
(b) Scenario 2 (“sustained change scenario 1”)(c) Scenario 3 (“sustained change scenario 2”)



(d) Scenario 4 (“set point scenario 1”)



(e) Scenario 5 (“set point scenario 2”)



### 3 Data and Methods

In order to study the effects of residential mobility on subjective well-being from a longitudinal perspective, large-scale panel data over a long period of time are needed. In the case of Germany, such data can be derived from the German Socio-Economic Panel Study (SOEP). The SOEP provides panel data for the German population since 1984, including information on a wide range of microeconomic, sociological, and psychological topics measured at both the household and the individual level (Goebel et al. 2018; Giesselmann et al. 2019). Starting with an initial sample of 5,921 households and 12,245 individuals in 1984, the survey has been continuously enriched with additional (refreshment

and enlargement) samples. In 2011, the sample consisted of 12,290 households and 21,336 individuals (Sieber 2013). Despite the study’s extensive longitudinal scale, there are several reasons why data from the SOEP are particularly suitable for the investigation of internal migration. First, mobile households are tracked as they move within Germany through the implementation of an elaborated follow-up concept (see Gramlich 2008). Second, because the mobile individuals in the survey are asked about their main migration motives, it is possible to differentiate between different types of moves.<sup>1</sup> Finally, information on moving distances at the street-block level has been available since 2001, which allow to distinguish between short- and long-distance moves (Goebel 2011).

In this study, data from the subsamples A to I of SOEP waves H to BB (1991 to 2011) are used. Given our research topic and following previous studies (e.g., Erlinghagen 2016), we restrict our sample to include only private households and individuals aged 18 to 80. After these restrictions have been applied, information from 38,281 individuals and 22,357 households are available, resulting in 392,309 observations for all 21 waves. Further restrictions have been imposed on the subgroup of mobile individuals: Individuals are considered mobile if they reported a change in residence in at least one wave between 1991 and 2011. Since multiple migration events can occur within each case, only the observations that refer to the first observed move are considered subsequently. Furthermore, to provide a useful reference level in the regression models, the observation time frame for each mobile individual has been restricted to 10 years before and 10 years after the migration event. Given these additional constraints, the final dataset contains 10,072 mobile individuals with 100,643 observations and 22,031 immobile individuals with 193,772 observations (person-years).

In the following investigations, the dependent variable is based on responses to the question: “How satisfied are you with your life, all things considered?” The responses are measured on a 11-point scale ranging from zero (“completely dissatisfied”) to 10 (“completely satisfied”). Given the equispaced nature of the response scale, we will follow a linear modeling approach in this study (Ferrer-i-Carbonell and Frijters 2004; Studer and Winkelmann 2011).

For the independent variables of greatest interest, a set of dummy indicators has been created that captures the time path of the observed migration events within the mobile population. Following the approach suggested by Clark et al. (2008), these dummy variables refer to the time span before and after the migration event. Thus, in each wave, the current “state” of the migration process is reflected by this set of dummy variables that indicate whether a move will occur in  $j$  waves (with  $j = -5, \dots, -1$ ) or has already occurred  $k$  waves ago (with  $k = 0, \dots, 5$ ), whereas the last dummy also includes all subsequent waves (until  $k = 10$ ). With this setup, the dynamic effects of regional mobility on life satisfaction can be investigated with reference to the average level of life satisfaction from 10 to five years before the migration event. In addition to these timing dummies, several control variables are considered in the following models, including individual-level variables like age, marital status, employment status, and subjective health condition, and household-level predictors like the number of children, a recent childbirth, and (equivalized) household income. As noted above, we are especially interested in analyzing the potential group-specific effects of the outlined migration dummies. Thus, we also estimate various models separated by, for

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<sup>1</sup>Unfortunately, information about moving reasons is only collected at the household level.

example, gender, qualification level, age, reasons for moving, and the distance of the move. Further information about the control variables and groups as well as summary statistics can be found in Tables A1, A2 and A3.

As indicated above, the main focus of this study is to evaluate the dynamic effects of internal migration on life satisfaction (in different subgroups), which could be described as the anticipation effect (SWB changes before the migration event) and the adaption effect (SWB changes after the migration event) of residential mobility (Frijters et al. 2011). For this purpose, fixed-effects regression models are implemented in the following investigations. Thus, in the subsequent models, only intra-individual (within) variability is taken into account, while time-constant unobserved heterogeneity between individuals is ruled out (e.g., Wooldridge 2002, 2013):

$$y_{it} - \bar{y}_i = \boldsymbol{\beta}'(\mathbf{x}_{it} - \bar{\mathbf{x}}_i) + \boldsymbol{\alpha}'(\mathbf{z}_{it} - \bar{\mathbf{z}}_i) + (\varepsilon_{it} - \bar{\varepsilon}_i) \quad (1)$$

Here,  $y_{it}$  represents the subjective life satisfaction of individual  $i$  in wave  $t$ ,  $\boldsymbol{\beta}$  is a vector of regression coefficients associated with the control variables ( $\mathbf{x}_{it}$ ),  $\boldsymbol{\alpha}$  is a vector of regression coefficients referring to the migration dummies ( $\mathbf{z}_{it}$ ), and  $\varepsilon_{it}$  is an idiosyncratic error term. To be more specific about the migration dummies in  $\mathbf{z}_{it}$ , the regression equation may be rewritten as:

$$\ddot{y}_{it} = \boldsymbol{\beta}'\ddot{\mathbf{x}}_{it} + \sum_{j=-5}^{-1} \alpha_j \ddot{z}_{jit} + \sum_{k=0}^5 \alpha_k \ddot{z}_{kit} + \ddot{\varepsilon}_{it} \quad (2)$$

In this expression,  $\ddot{y}_{it}$ ,  $\ddot{\mathbf{x}}_{it}$ ,  $\ddot{z}_{jit}$  and  $\ddot{z}_{kit}$  refer to the respective time-demeaned variables of the previous equation. Here, the first set of  $\ddot{z}_{jit}$ - variables includes five timing dummies indicating the time span in which a move will take place (from  $-5$  to  $-1$  years). Likewise, the second set of  $\ddot{z}_{kit}$ - variables includes six dummies that count the elapsed time after the migration event, ranging from zero to five years (and beyond due to  $\ddot{z}_{5it}$ ). In order to take potential serial correlation in the idiosyncratic errors  $\varepsilon_{it}$  into account (e.g., due to unobserved events which affect SWB over multiple waves; Andreß et al. 2013), cluster-robust standard errors (with observations clustered within individuals) are reported in the following sections.<sup>2</sup> Cases with missing values are excluded from the analysis.

At this point, it is important to note that the outlined modeling approach can be implemented in two different ways. On the one hand, the model of Eq. 1 and 2 can be fitted using only data from the mobile subgroup. However, in this case there is only limited information for the simultaneous estimation of the explicitly time-related effects of age and migration timing, since the corresponding variables are perfectly collinear from wave  $j = -5$  to  $k = 4$  for each case.<sup>3</sup> On the other hand, data from both mobile and immobile individuals can be used, which is the approach utilized in the following sections. In this context, the migration dummies are set to zero for immobile individuals, such that this group contributes additional information (only) for the estimation of the effects of the control variables (including age). We should keep in mind that this approach involves the assumption of similar effect patterns of the control variables in both groups. However, the results of an alternative model specification with only mobile individuals included in

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<sup>2</sup>We thereby follow the result of Wooldridge's (2002) test on serial correlation, which in the present case indicates that the assumption of independent  $\varepsilon_{it}$ - errors is not met (Drukker 2003).

<sup>3</sup>On a related note, we refrain from including survey years as additional control variables in our models.

the fitting process, and with a single migration dummy distinguishing between a pre- and post-migration period, support the findings of our empirical approach (see Table A4).

## 4 Findings

### 4.1 Subjective Well-being Trajectories and Internal Migration

We start by presenting overall subjective well-being trajectories over the life course to provide some context before turning to the regression results. Figure 2 shows the age gradient of SWB among migrants and non-migrants (as defined in section 3) in eastern and in western Germany. All four groups show the same characteristic U-shaped age-related development in SWB, although the declines in SWB in mid-life and the increases in SWB in old age are much more pronounced in the east than in the west. In addition, eastern Germans generally report lower SWB at all ages (cf. Schimmack et al. 2008; Easterlin 2009). Finally, it appears that the lower SWB of migrants compared to stayers is primarily a western German phenomenon, as no clear differences between those two groups can be observed in the east (Figure 2).

Figure 3 presents the development of average well-being in the migration process for mobile individuals of different age groups, thus providing a descriptive approach to the main research question of this paper. On this basis, a modest decline in subjective well-being can be observed for the young and the middle-aged groups after the migration event, whereas the SWB levels of mobile individuals aged 55-80 seem to be quite stable over the course of the migration process, with a modest peak during and shortly after the year of migration. However, it is important to note that this descriptive approach cannot, for example, account for the (non-linear) negative age effect on subjective well-being, which differs substantially over the life course, as suggested above (see Figure 2 again).

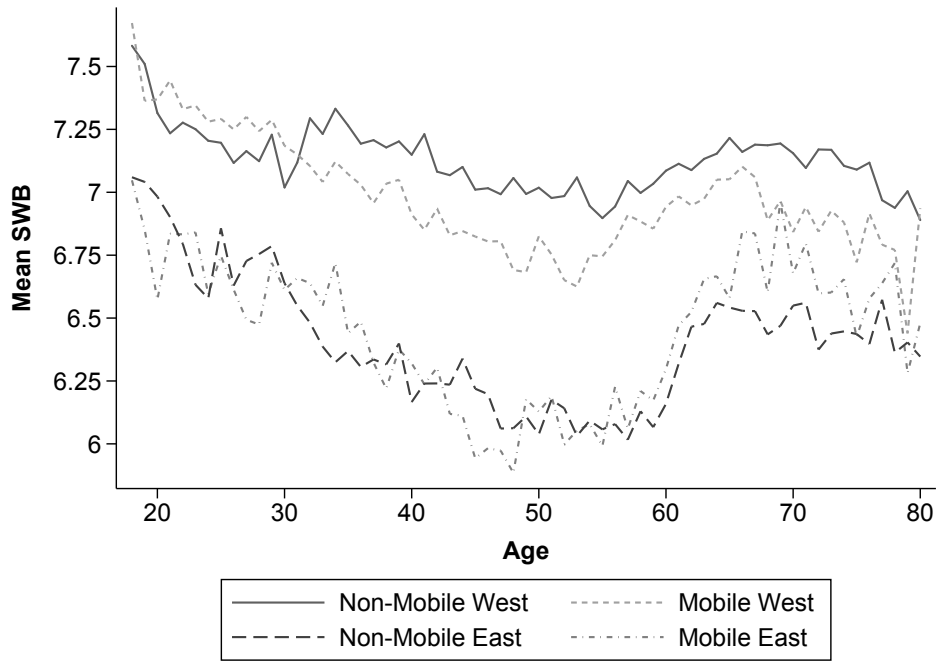


Figure 2: SWB of migrants and non-migrants by age and region

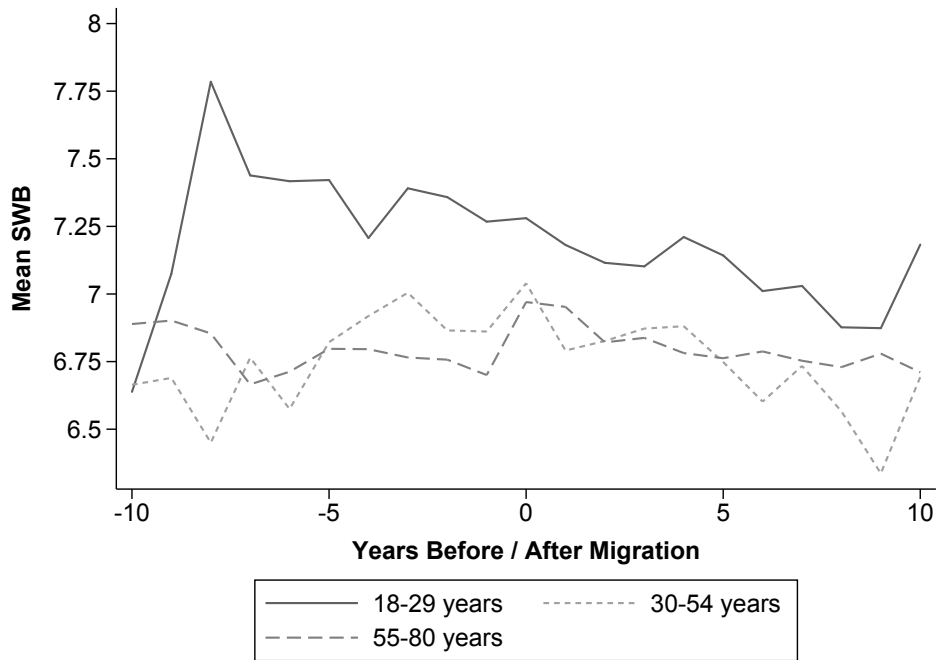


Figure 3: SWB by years before and after migration

## 4.2 Fixed-effects Models

The results of the first (general) fixed-effects regression model investigating the dynamic effects of migration on SWB are displayed in Table 1. First, we can see that the coefficients of the control variables in Table 1 exhibit the expected effect structures. Here, a U-shaped effect of age, an inverted U-shaped effect of household income, and strong negative effects of unemployment, separation, and – in particular – poor health can be observed. Turning to the coefficients of greatest interest, we see that a distinct effect pattern emerges over the course of the migration process, as indicated by the coefficients of the migration timing dummies (see also Figure 4a). On the one hand, in the present case, there is little evidence of a strong anticipation effect of regional mobility on SWB. At best, a slight increase in subjective well-being can be observed in the last two years before the migration event ( $j = -2$  &  $j = -1$ ), whereas in the preceding years no significant deviations from the baseline level of SWB (average SWB from 10 to five years before the migration event) can be seen. On the other hand, the migration event is accompanied by a substantial instant increase in SWB in the year in which the move takes place. Interestingly, it becomes clear that this positive effect continues – albeit at a somewhat lower level – over the years after the migration event, as indicated by the coefficients of the timing dummies  $k = 1$  to  $k = 4$ . Most notably, even the last timing dummy, which summarizes the years from  $k = 5$  until  $k = 10$  after relocation, displays a positive and significant migration effect, which indicates that mobility has a large and sustained effect on SWB. These results fit our theoretically developed “sustained change scenario 1” (see section 2.3 above), as we see (almost) no anticipation effect before the migration event, and a sustained positive adaptation effect after the migration event. Thus, based on these findings, we could conclude that regional mobility is less a response to certain stressors than a response to perceived opportunities to improve one’s job- or housing-related living conditions, and that these improvements are reflected in the individuals’ SWB.

Our results appear to contradict the findings of Nowok et al. (2013), which support the set point theory, i.e., that migration can, at best, restore the individual’s original level of SWB after a drop in happiness before relocation. Although it is possible that these discrepancies are mainly attributable to the fact that two different datasets covering internal migration in two different institutional and cultural settings (UK vs. Germany) were used, we think that these differences are primarily a result of distinct differences in research strategies. It appears that Nowok et al. (2013) excluded all non-migrants from their estimations. Given the complex interrelationship between age on the one hand and both the likelihood of migration and the level of SWB on the other, this strategy cannot disentangle these two age effects. Thus, from our perspective, it seems advisable to include non-migrants as well as migrants in the analyses, as doing so helps to ensure that our estimate of the timing effect on SWB is really an effect of the migration process itself, and is not a disguised age effect. We can therefore suggest that the differences between our findings and the results of Nowok et al. (2013) can be mainly explained by differences in the research strategies used.

In order to examine the dynamic effects of migration on subjective well-being for different groups, various sub-models of the previously outlined fixed-effects specification have been fitted, all using the same set of exogenous variables. The main focus in this analysis is to investigate whether the same SWB pattern can be observed in differently privileged



subgroups of mobile individuals. Thus, we explore the question of whether, as hypothesized in our theoretical considerations in section 2.3, SWB develops differently for different groups of migrants.

The first set of results is shown in Figure 4. Here, the coefficients of the migration timing dummies are displayed for different socio-demographic subgroups, classified by gender, education, age, household income, and migration background. Notably, we can see that only a few groups deviate substantially from the main effect pattern shown in Figure 4a. Turning to Figures 4b and 4c, we can see that there are only modest differences in the development of SWB between men and women, but that the level of SWB in the course of the migration process is higher in the male than in the female subgroup. However, a substantial and long-lasting boost in SWB after the migration event can also be observed in the female subgroup, which is noteworthy given the literature on “tied migrants” and gender-specific consequences of mobility (e.g., Cooke 2008). When the effect patterns of SWB are compared over different ISCED and age groups, the most pronounced deviations from the “reference pattern” in Figure 4a can be observed in the subgroup of less qualified migrants (ISCED 1 & 2). Among this subgroup, we find a (modest) negative anticipation effect and a quick return to the baseline level of SWB after the migration event, which is in line with our theoretically hypothesized “set point scenario 2” (see section 2.3 above). Thus, unlike in the previously discussed findings, it appears that regional mobility among this group could be a result of some stressor. However, no similar effect pattern can be observed when we look at groups defined in terms of household income or migration background. Even in Figures 4j (income < 1,250 Euro), 4n (first-generation immigrants), and 4o (second-generation immigrants), we can see that regional mobility seems to have a mostly positive effect on SWB in the years after migration, although the effect is somewhat less pronounced than in the respective comparison groups (e.g., 1,250-2,250 Euro & native Germans).

In addition to the outlined socio-demographic classifications, migrants are differentiated by their reasons for moving, the distance of their move, and their origin-destination patterns (see Figure 5). Figure 5c shows that the development of SWB among migrants moving from western to eastern Germany differs from the overall “reference pattern” (Figure 4a). Referring to our theoretical considerations in section 2.3, we note that in this case, the “no impact scenario” seems to apply: i.e., the SWB of migrants is not affected by anticipation or adaptation during the migration process. However, as these results are based on a relatively small number of mobile cases ( $n = 67$ ), they should be interpreted with caution. More substantial differences can be observed between migrants moving within the western part of the country (“West-West”, Figure 5a) and migrants moving within the eastern region (“East-East”, Figure 5b). First, a slightly positive SWB anticipation effect can be observed for West-West migrants during the three years before the migration event. No such anticipation effect can be found for East-East migrants. Second, SWB after migration develops differently among West-West and East-East migrants. Whereas West-West movers show a sustained increase in SWB in the years after migration, East-East movers show a temporary increase in SWB only. In the East-East group, SWB returns to the baseline value at least three years after the moving event, a pattern that corresponds to our “set point scenario 1” (section 2.3 above). While it is quite difficult to find a clear explanation for these findings, it is likely that these East-West differences are related to the lower overall levels of SWB in eastern Germany (see Figure 2). In all parts of Germany, moving seems

to have a positive effect on SWB, as a move is generally linked to an improvement in an individual's housing conditions. However, in the east, this improvement may be outweighed by persistently poor living conditions (e.g., low incomes, high unemployment) (cf. Easterlin 2009). Thus, such negative macro effects could be responsible for the diminishing positive effects in the course of individual migration.

In contrast, moving distance seems to have no specific impact on the development of SWB in the course of migration (Figure 5e & f). Regardless of whether people make short-distance ( $< 50$  km) or long-distance ( $\geq 50$  km) moves, SWB follows the general pattern, with no anticipation effect and a sustained positive adaptation effect in the course of migration. The same pattern applies to moves between smaller ( $< 100,000$  inhabitants) and bigger ( $\geq 100,000$  inhabitants) communities (Figure 5j to m). In addition, Figures 5g to i indicate that sustained positive effects on SWB after migration can mainly be observed in cases in which the migration event was motivated by the individuals' housing situation or residential environment. Since this group accounts for a large proportion of migrants in the main fixed-effects regression model, the effect pattern of Figure 4a may be partly driven by migrants who were successful in moving up the housing ladder in terms of, for example, their housing conditions or their neighborhood quality. This finding could help to explain why most of the analyzed subgroups follow this reference pattern,<sup>4</sup> and why less educated migrants and eastern German migrants in particular deviate from this pattern by showing only a temporary increase in SWB. It is possible that because these migrants suffer from worse overall living conditions, an improvement in their living conditions over the medium to long term is outweighed by higher unemployment risks or lower income opportunities.

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<sup>4</sup>Our analyses also show no differences with regard to certain personality traits ("Big Five") and the development of SWB during the migration process.

Table 1: Fixed-effects regression, total sample ( $y_{it} = \text{SWB}$ )

|                                | est.               | se      | t       |
|--------------------------------|--------------------|---------|---------|
| Years before / after migration |                    |         |         |
| -5                             | 0.046              | (0.030) | 1.518   |
| -4                             | -0.011             | (0.030) | 0.345   |
| -3                             | 0.045              | (0.030) | 1.479   |
| -2                             | 0.052 <sup>†</sup> | (0.029) | 1.755   |
| -1                             | 0.053 <sup>†</sup> | (0.030) | 1.754   |
| 0                              | 0.253***           | (0.030) | 8.508   |
| 1                              | 0.200***           | (0.030) | 6.573   |
| 2                              | 0.162***           | (0.031) | 5.151   |
| 3                              | 0.176***           | (0.032) | 5.407   |
| 4                              | 0.168***           | (0.034) | 4.956   |
| 5+                             | 0.173***           | (0.033) | 5.175   |
| Age                            | -0.027***          | (0.001) | 20.322  |
| Age <sup>2</sup>               | 0.001***           | (0.000) | 6.106   |
| Marital status: Single         | ref.               |         |         |
| Married / in Partnership       | 0.074*             | (0.032) | 2.296   |
| Separated                      | -0.346***          | (0.058) | 5.971   |
| Divorced                       | -0.150**           | (0.053) | 2.823   |
| Widowed                        | -0.252***          | (0.054) | 4.654   |
| Labour status: Employed        | ref.               |         |         |
| marginal Emp.                  | -0.117***          | (0.020) | 5.753   |
| Non-Working                    | -0.045**           | (0.015) | 3.041   |
| Unemployed                     | -0.575***          | (0.021) | 27.894  |
| in Training                    | 0.116***           | (0.027) | 4.216   |
| in School/Student              | 0.082**            | (0.025) | 3.257   |
| Equiv. HH-Inc.                 | 0.000***           | (0.000) | 11.876  |
| Equiv. HH-Inc. <sup>2</sup>    | -0.000***          | (0.000) | 7.350   |
| Child born                     | 0.128***           | (0.022) | 5.761   |
| Number of children             | 0.022*             | (0.009) | 2.516   |
| Health status: Acceptable      | ref.               |         |         |
| Very good                      | 0.701***           | (0.014) | 48.639  |
| Good                           | 0.391***           | (0.008) | 47.414  |
| Less good                      | -0.544***          | (0.012) | 46.175  |
| Bad                            | -1.616***          | (0.031) | 52.315  |
| $\hat{\beta}_0$                | 6.845              | (0.029) | 233.062 |
| n observations                 | 233910             |         |         |
| n individuals                  | 31389              |         |         |
| $r^2_{within}$                 | .093               |         |         |
| $r^2_{between}$                | .245               |         |         |
| $r^2_{overall}$                | .188               |         |         |

†:  $p \leq 0.1$ ; \*:  $p \leq 0.05$ ; \*\*:  $p \leq 0.01$ ; \*\*\*:  $p \leq 0.001$

Figure 4: SWB patterns for socio-demographic subgroups

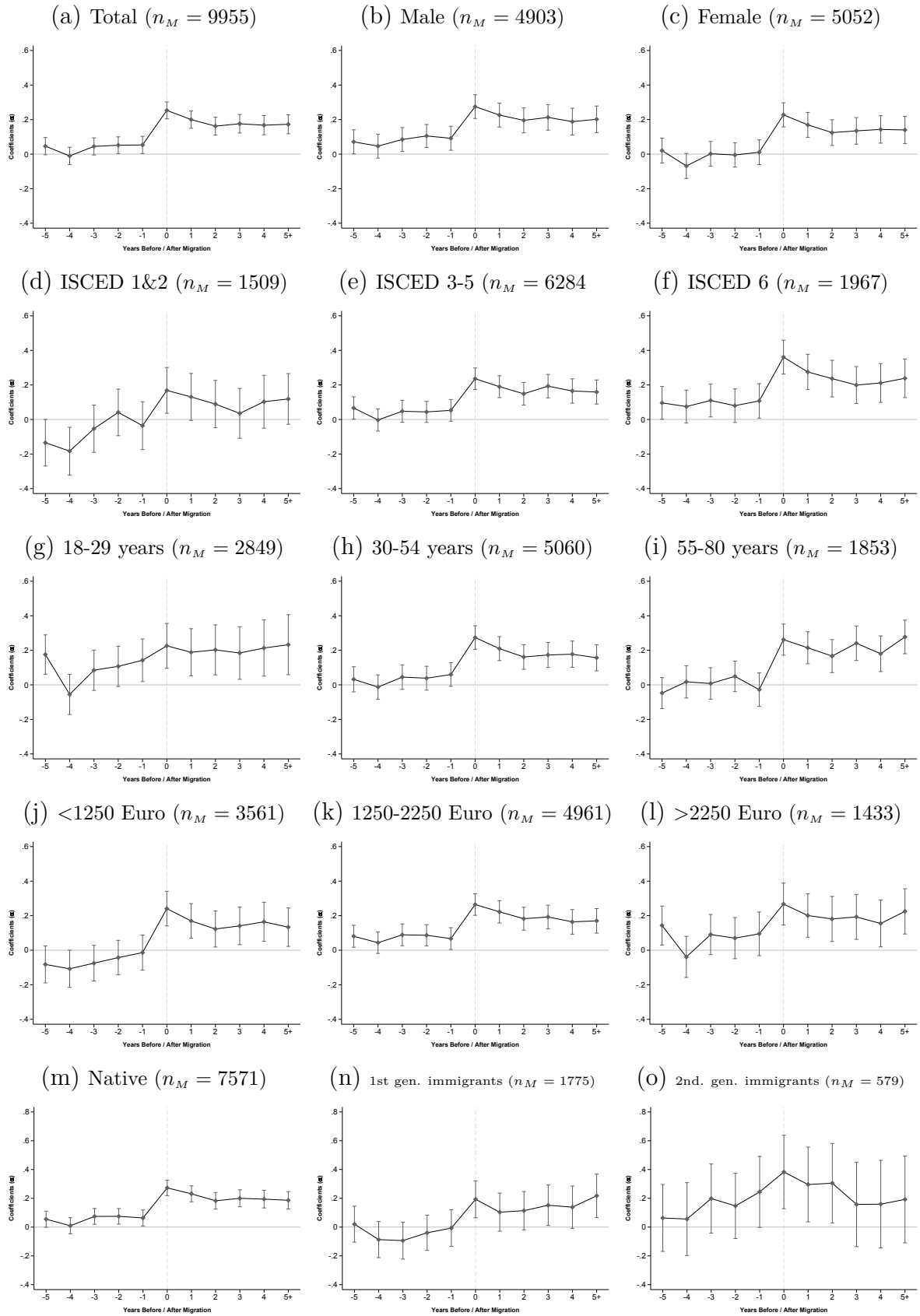
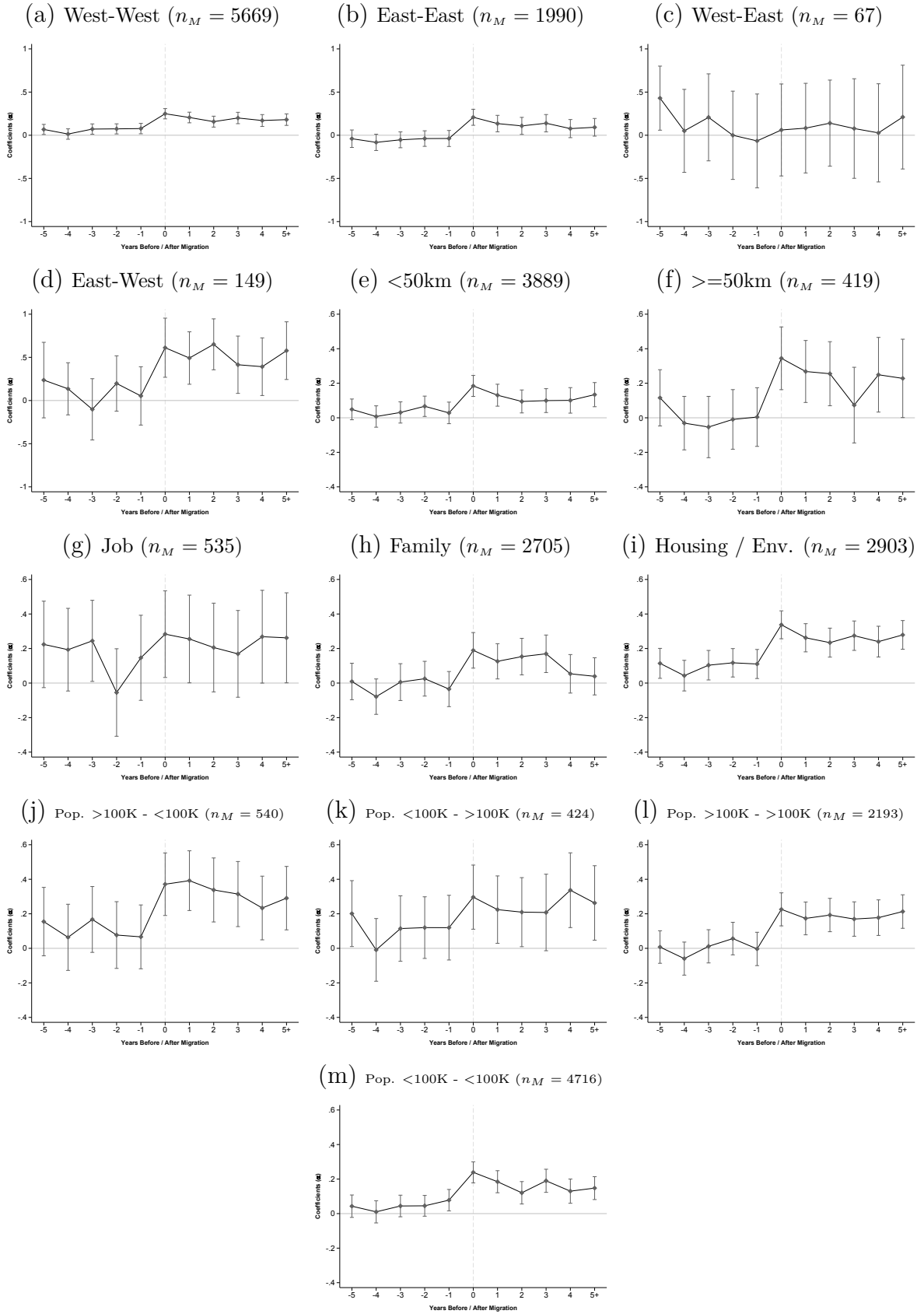


Figure 5: SWB patterns by moving characteristics



## 5 Discussion

In our paper, we have investigated the anticipation and adaptation of subjective well-being (SWB) in the course of internal migration. Our goal was to not only learn more about the interrelationship between SWB and migration, but to improve our knowledge of the migration process itself. We hypothesized that SWB correlates with the process of migration, and that this correlation is at least partly socially stratified. From a theoretical perspective, we developed different scenarios of how SWB might change in the years before and after the actual event of migration. To test our assumptions, we estimated fixed-effects regressions using data from the German Socio-Economic Panel study (SOEP).

Our results suggest that for SWB, there is no anticipation effect before the event of migration, but there is a highly significant and sustained positive adaptation effect after the event of migration. In general, internal migration seems to lead to a long-lasting increase in SWB. Surprisingly, this pattern was found for almost all of the analyzed socioeconomic and socio-demographic subgroups. Moreover, we observed no important changes in the overall pattern depending on migration distance, reasons for migration, or individuals' personality traits. From a theoretical perspective, we had initially hypothesized that social subgroups with different migration motives and constraints would have divergent patterns of SWB over the course of migration. Instead, we found a sustained increase in SWB across almost all subgroups.

Our results indicate that regional mobility occurs less in response to certain stressors, and more in response to opportunities to improve job- or housing-related living conditions. These improvements are reflected in individuals' SWB. Thus, internal migration appears to be triggered primarily by opportunities rather than by constraints. Frightened people tend to move only if absolutely necessary, and most try to stay where they are. By contrast, people who perceive chances rather than risks tend to be brave enough to leave their familiar environment. Thus, social inequality in chances and risks results in an unevenly distributed likelihood of moving (cf. Huinink et al. 2014). Therefore, our results have to be interpreted in the context of this self-selection process.

Unlike forced job mobility triggered by employer-induced dismissals, relocation and spatial mobility are often based on voluntary decisions made by the individuals themselves, at least in highly industrialized welfare states like Germany. This might also explain why most of the migrants we studied showed a pattern of sustained growth in individual SWB after migration, independent of their social status or migration reasons.

However, we should note that the results for certain subgroups diverge from these general findings. In line with the set point theory, we found that less qualified movers (ISCED 1 & 2) and individuals who migrated within the eastern part of Germany initially showed a significant increase in SWB shortly after migration, but that this increase seems to have been only a temporary phenomenon. Given that in Germany, the labor market prospects for unskilled workers are extremely poor, and that the economic situation is still worse in eastern than in western Germany, these results are in line with our general finding that migration is mainly opportunity-driven and generally leads to an increase in SWB. However, if living conditions in general and economic conditions in particular are poor, the positive effects of migration on individual SWB are sooner or later outweighed by such negative parameters.

Of course, our analyses have some limitations. We do not know for certain if our results can be transferred to internal migrants in other industrialized countries. The fact that we found regional differences between eastern and western Germany could suggest that context has important effects on the development of SWB during the migration process. Local living conditions may interact with the adaptation of SWB after the migration event and potentially counteract the sustained increase in SWB that we observed in our study. Thus, further investigations that rely on suitable panel data from other countries seem to be necessary. Furthermore, it is important to note that our results are naturally dependent on our methodological setup, i.e., on investigating the dynamic effects of migration on SWB based on both mobile and immobile individuals in order to account for the collinearity of age and the migration process (cf. section 3). Despite these limitations, our paper provides new empirical evidence on the under-investigated relationship between individual migration processes, the development of SWB, and social stratification that can be used as a basis for further improvements in dynamic migration research. In line with contemporary developments in migration research, it confirms the importance of longitudinal analyses for understanding the individual motives for and the individual outcomes of migration.

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## 6 Appendix

Table A1: Description of control variables and groups

(a) Variables

| Variable           | Description   |
|--------------------|---|
| Age                | Age in years  |
| Marital status     | Single, Married or in Partnership, Separated, Divorced, Widowed                     |
| Labour status      | Employed, marginal Emp., Non-Working, Unemployed, in Training, in School or Student |
| Equiv. HH-Inc.     | Net HH-Income / sqrt(number of persons in household)                                |
| Child born         | Child born previous year  |
| Number of children | Number of children in household   |
| Health status      | Very good, Good, Acceptable, Less good, Bad   |

(b) Groups

| Group              | Description   |
|--------------------|---|
| Gender             | Constant within cases                                 |
| Education          | Based on max(ISCED) within cases                      |
| Age                | Based on mean(Age) within cases                       |
| Equiv. HH-Inc.     | Based on mean(Equiv. HH-Inc.) within cases            |
| Mig. background    | Constant within cases                                 |
| Region             | Home region vs. destination region                    |
| Moving reasons     | Primary moving reason                                 |
| Distance           | Distance moved  |
| Origin-destination | Population size home vs. pop. size destination region |

Table A2: Summary statistics for socio-demographic variables

|                                 | Mobile |       |       | Immobile |       |       |
|---------------------------------|--------|-------|-------|----------|-------|-------|
|                                 | %      | Freq. | Total | %        | Freq. | Total |
| Gender: Male                    | 49.26  | 4961  | 10072 | 49.36    | 10874 | 22031 |
| Edu.: ISCED 1&2                 | 15.46  | 1526  | 9871  | 18.00    | 3852  | 21395 |
| Edu.: ISCED 3-5                 | 64.39  | 6356  | 9871  | 63.26    | 13535 | 21395 |
| Edu.: ISCED 6                   | 20.15  | 1989  | 9871  | 18.73    | 4008  | 21395 |
| Age: 18-29 years                | 29.22  | 2885  | 9874  | 18.36    | 3986  | 21711 |
| Age: 30-54 years                | 51.88  | 5123  | 9874  | 38.35    | 8327  | 21711 |
| Age: 55-80 years                | 18.90  | 1866  | 9874  | 43.29    | 9398  | 21711 |
| Equiv. HH-Inc.: <1250 Euro      | 35.88  | 3587  | 9996  | 32.93    | 7099  | 21560 |
| Equiv. HH-Inc. : 1250-2250 Euro | 49.77  | 4975  | 9996  | 45.98    | 9914  | 21560 |
| Equiv. HH-Inc. : >2250 Euro     | 14.35  | 1434  | 9996  | 21.09    | 4547  | 21560 |
| Mig. back: Native               | 76.35  | 7667  | 10042 | 83.69    | 18402 | 21987 |
| Mig. back: 1st gen. immigrants  | 17.76  | 1783  | 10042 | 11.61    | 2552  | 21987 |
| Mig. back: 2nd. gen. immigrants | 5.90   | 592   | 10042 | 4.70     | 1033  | 21987 |

Table A3: Summary statistics for moving characteristics

|  | %     | Freq. | Total |
|--|-------|-------|-------|
| Region: West-West                      | 56.94 | 5735  | 10072 |
| Region: East-East                      | 19.88 | 2002  | 10072 |
| Region: West-East                      | 0.67  | 67    | 10072 |
| Region: East-West                      | 1.50  | 151   | 10072 |
| Distance: $\geq 50$ km                 | 9.74  | 423   | 4341  |
| Reasons: Job                           | 11.55 | 1163  | 10072 |
| Reasons: Family                        | 41.57 | 4187  | 10072 |
| Reasons: Housing                       | 41.51 | 4181  | 10072 |
| Reasons: Environment                   | 9.89  | 996   | 10072 |
| Origin-dest.: Pop. $>100$ K - $<100$ K | 5.40  | 544   | 10072 |
| Origin-dest.: Pop. $<100$ K - $>100$ K | 4.24  | 427   | 10072 |
| Origin-dest.: Pop. $>100$ K - $>100$ K | 21.99 | 2215  | 10072 |
| Origin-dest.: Pop. $<100$ K - $<100$ K | 47.33 | 4767  | 10072 |

Table A4: Fixed-effects regressions within mobile subgroup ( $y_{it} = \text{SWB}$ )

|                             | Time frame $-5/+5^\dagger$ |        |         | Time frame $-10/+10^{\dagger\dagger}$ |        |         |
|-----------------------------|----------------------------|--------|---------|---------------------------------------|--------|---------|
|                             | est.                       | se     | t       | est.                                  | se     | t       |
| Post-Migration              | .137***                    | (.025) | 5.379   | .134***                               | (.021) | 6.240   |
| Age                         | -.032***                   | (.004) | 7.155   | -.027***                              | (.002) | 10.793  |
| Age <sup>2</sup>            | .000                       | (.000) | .486    | .001**                                | (.000) | 2.848   |
| Marital status: Single      | ref.                       |        |         | ref.                                  |        |         |
| Married / in Partnership    | .067                       | (.043) | 1.567   | .082*                                 | (.039) | 2.089   |
| Separated                   | -.223*                     | (.093) | 2.402   | -.270***                              | (.079) | 3.412   |
| Divorced                    | -.034                      | (.089) | .376    | -.102                                 | (.075) | 1.374   |
| Widowed                     | -.070                      | (.121) | .574    | -.107                                 | (.098) | 1.096   |
| Labour status: Employed     | ref.                       |        |         | ref.                                  |        |         |
| marginal Emp.               | -.230***                   | (.045) | 5.132   | -.182***                              | (.037) | 4.941   |
| Non-Working                 | -.121***                   | (.032) | 3.759   | -.093***                              | (.027) | 3.506   |
| Unemployed                  | -.687***                   | (.038) | 17.972  | -.640***                              | (.033) | 19.335  |
| in Training                 | .019                       | (.050) | .389    | .049                                  | (.045) | 1.074   |
| in School/Student           | -.009                      | (.046) | .196    | .022                                  | (.040) | .550    |
| Equiv. HH-Inc.              | .000***                    | (.000) | 5.906   | .000***                               | (.000) | 7.787   |
| Equiv. HH-Inc. <sup>2</sup> | -.000***                   | (.000) | 5.542   | -.000***                              | (.000) | 6.478   |
| Child born                  | .096**                     | (.032) | 2.971   | .117***                               | (.028) | 4.114   |
| Number of children          | -.003                      | (.018) | .177    | .000                                  | (.014) | .020    |
| Health status: Acceptable   | ref.                       |        |         | ref.                                  |        |         |
| Very good                   | .741***                    | (.029) | 25.172  | .767***                               | (.025) | 30.447  |
| Good                        | .419***                    | (.018) | 23.263  | .434***                               | (.015) | 29.357  |
| Less good                   | -.502***                   | (.028) | 18.081  | -.532***                              | (.023) | 23.544  |
| Bad                         | -1.517***                  | (.070) | 21.640  | -1.558***                             | (.060) | 26.154  |
| $\hat{\beta}_0$             | 6.712                      | (.042) | 160.640 | 6.670                                 | (.036) | 183.923 |
| n observations              | 53200                      |        |         | 73640                                 |        |         |
| n individuals               | 9725                       |        |         | 9750                                  |        |         |
| $r^2_{within}$              | .079                       |        |         | .088                                  |        |         |
| $r^2_{between}$             | .273                       |        |         | .288                                  |        |         |
| $r^2_{overall}$             | .196                       |        |         | .202                                  |        |         |

†:  $p \leq 0.1$ ; \*:  $p \leq 0.05$ ; \*\*:  $p \leq 0.01$ ; \*\*\*:  $p \leq 0.001$

†: Post-Migration = 1 if  $k = 1, \dots, 5$ , 0 otherwise

††: Post-Migration = 1 if  $k = 1, \dots, 10$ , 0 otherwise