Journal of Happiness Studies (2020) 21:2931–2955
https://doi.org/10.1007/s10902-019-00207-6

RESEARCH PAPER

Migration and Happiness: Evidence from Germany

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Published online: 4 December 2019

Abstract
With a shrinking population and a rising dependency ratio, Germany needs young migrants, willing and able to integrate with the German society and actively participate in its economic progress. In order to devise successful immigration and integration policies, policymakers should be aware of the factors affecting migrants' intentions and decisions. In this paper we explore the impact of different measures of subjective well-being on the intended duration of migration stay. Unlike previous research that focused on a binary outcomes of stay intentions, we utilize more detailed data on the year length of intended stay. This way we are able to estimate the marginal effects of happiness on each additional year of stay. With and without addressing endogeneity and sample selection, we find that migrants who are happy with life tend to stay permanently in the host country. Our results also suggest that spouse residence location, education and personal income affect male intentions to stay, while peer income and number of children affect female intentions to stay.

Keywords Life satisfaction · Subjective well-being · Temporary migration · Germany

1 Introduction

Although 20% of the population in Germany has migration background, popular political concerns in Germany indicate that the majority of the migrants is insufficiently integrated (Elger et al. 2009). A recent study by the Berlin Institute finds that immigrants tend to be less educated, more frequently unemployed and less likely to participate in public life, relative to the German born population. This study also finds that families of those who came as guests or temporary workers are also less integrated than others. With a shrinking population and a rising dependency ratio (Preston 2015), Germany needs young migrants, not to burden the society, but to toil and drive the economy forward. Thus, an efficient and sustainable integration policy should aim to attract legal migrants, interested in staying

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permanently and participating fully in the society (Federal Ministry of the Interior 2014). In order to devise effective integration policies, it is essential to understand the factors affecting immigrants' decisions or intentions to stay permanently. For example, those who feel rejected by the German society will be less willing to integrate and will consider themselves as foreigners even long after they have migrated. This paper explores how different aspects of subjective well-being (SWB) affect migrants' duration of stay intentions.

According to recent OECD (2008) estimates, 20–50% of immigrants leave the host country within the first 5 years after migration. Although estimates vary with destination and time periods, migration in Europe is predominantly temporary. In particular, 10 years after arrival, half of the original arrival cohort has left the destination country (Dustmann and Görlach 2016). In line with the reasoning provided in Stark and Bloom (1985), Bellemare (2007) and many others, if migrants evaluate their expected utility every period and decide whether to remain in the host country, return to the source country or migrate to other countries, then they also weigh their relative SWB, a proxy for latent utility, in each period. Thus, we would expect that happier migrants will intend to stay longer and vice versa.

Simpson (2011) in his review, discusses recent developments in the analysis of migration and happiness. Polgreen and Simpson (2011) empirically identify a U-shaped relationship between happiness and emigration rates in the source country. Micro behavioral studies are more common and have attracted the attention of researchers in sociology, psychology and economics. Existing studies pose five main research questions: (1) whether natives are happier than migrants (Bălţătescu 2007; Farmer et al. 2010; Senik 2014; Bartram 2011); (2) how migrant groups within the same country differ in terms of happiness (Amit 2010; Amit and Litwin 2010; Amit 2012); (3) how immigration affects happiness levels of family members back home (Borraz et al. 2010); (4) the effect of internal migration on happiness (Melzer 2011; Jong et al. 2002; Nowok et al. 2011); and (5) the relationship between individual happiness and intentions to migrate (see Cai et al. 2014; Chindarkar 2014; Lovo 2014; Mara and Landesmann 2013 among others).

Our paper directly relates to the literature investigating the relationship between happiness and intentions to migrate or re-migrate. Our main hypothesis does not focus on migration duration per se, but empirical evidence has shown a strong link between intended and actual migration decisions (Gordon and Molho 1995; Böheim and Taylor 2002). In fact, according to psychological theories of reasoned action and planned behavior, individual intention predicts the actual decision and behavior (Ajzen 1991; Ajzen and Fishbein 2005; Fishbein and Ajzen 1975; Hale et al. 2002). In addition, it is common in migration literature to use migration intentions as a proxy of actual migration decisions (see for example Dustmann and Okatenko 2014).

The relationship between SWB and intentions to migrate has been studied for non-migrants[1] but papers on the length of stay intentions are scarce. To our knowledge, the only such study is Mara and Landesmann (2013). They study life satisfaction of Romanian migrants in Italy and show that permanent and longer temporary stays, are more likely for migrants who declare to be happy with life.

The purpose of this paper is to empirically investigate the relationship between happiness and migration in Germany taking into account endogeneity and sample selection. Endogeneity arises from the existence of unobservable elements that affect both happiness

[1] Cai et al. (2014), Chindarkar (2014), Lovo (2014), Otrachshenko and Popova (2014), Frijters et al. (2004), Erlinghagen (2012), Graham and Markowitz (2011).

and migration decisions, while sample selection arises from the unbalanced nature of our panel data in addition to sample restrictions. In particular, we examine whether life satisfaction affects migrant intentions to stay permanently or temporarily, as well as the marginal effects for temporary migrants using the method developed in Semykina and Wooldridge (2010). We focus on temporary migration, since most migration to Europe over the last few decades is of this nature (Dustmann and Weiss 2007). Using the German Socio-Economic Panel (GSOEP) data we identify a negative relationship between individual well-being, a proxy for latent utility, and intentions to out-migrate. In addition, we find a positive effect of happiness on the intentions to stay permanently in the host country, reaffirming the results of Mara and Landesmann (2013).

The rest of our paper is structured as follows: Sect. 2 reviews the literature, Sect. 3 presents our data and methodology, Sect. 4 discusses our results and Sect. 5 concludes.

2 Literature

2.1 Empirical Literature

Studies on the relationship between life satisfaction and intentions to migrate are scarce. A handful of studies have looked at the relationship between happiness and potential, desired, or intended migration for non-migrants. Graham and Markowitz (2011) and Chindarkar (2014), using data from Latinobarometro, look at the happiness levels of potential migrants in Latin America, and find that lower happiness levels increase the intention to migrate abroad, *ceteris paribus*. Cai et al. (2014), using the Gallup World Poll data for 154 countries, use both life satisfaction and SWB to assess the above relationship. Their results confirm the negative association between happiness and intentions to migrate abroad permanently, and are robust to different proxies of happiness. Similarly, Otrachshenko and Popova (2014), using Eurobarometer data for 27 Central, Eastern, and Western European countries, find that people have stronger intentions to migrate when dissatisfied with life. Using the Gallup World Poll data for 25 European countries Lovo (2014) investigates (1) the determinants of potential migration using micro data, and (2) the factors affecting destination preferences using macro data. She finds that potential migrants are more educated, richer, younger and less satisfied with life compared to other respondents. She also finds that higher life satisfaction in the destination country increases the willingness of potential migrants to move there.

Other papers on the relationship between SWB and migration (or relocation) in Germany present the following evidence. Frijters et al. (2004), using the GSOEP data, examine life satisfaction patterns of Eastern and Western Germans following reunification. Using decomposition analysis, they find that Eastern Germans experienced an increase in life satisfaction, an improvement which was mainly attributed to better average circumstances, while Western Germans did not experience much change in life satisfaction during the same period. Erlinghagen (2012), using data from the European Social Survey (ESS), looks at differences in SWB of German emigrants, non-migrants, and remigrants. His findings indicate that German emigrants experience an increase in SWB compared to the other two groups, but these differences cannot be explained by differences in socio-economic or socio-demographic characteristics.

Closer to our study, Landesmann and Mara (2013) investigate life satisfaction of Romanian migrants in Italy in 2011. In particular, they look at how life satisfaction affects migration plans, i.e. the decision to stay permanently, out-migrate (to other

countries), or return to the country of origin. Their estimation highlights the intent to permanently stay in Italy for those migrants who "strongly agree" or "agree" to being happy with life in migration, while it negatively affects their intention to out-migrate or return to Romania. Life satisfaction is also found to have a positive effect on the intended duration of stay in the host country. Landesmann and Mara (2013) address endogeneity by using instrumental variable methods. However, when they disaggregate their sample by gender, they find that life satisfaction correlates with migration only for women, while this finding is not confirmed for men.

2.2 Theoretical Foundation

Theoretically, there may be many reasons for migrants to find it optimal to return back home or re-migrate, despite persistently more favorable conditions in the host country. Reality not tallying with expectations, high returns of human and financial capital at home, cessation of migration as a tool for insurance, preference for home consumption and higher purchasing power at home, are possible explanations offered in the literature. Stark and Taylor (1991) use the theory of relative deprivation and arguments of risk spreading to explain why migrants may return to a less wealthy economy or region. Return migration may be because of successful high return investment at home, that was financed or facilitated through migration (Stark and Taylor 1991). Djajic and Melbourne (1988) explain return migration based on the assumption of stronger preference for consumption in the home country. Dustmann (1999) shows that return migration may be optimal if the host country currency has a higher purchasing power in the home country, and if there are higher returns in the home economy on human capital, acquired in the host country.

All these models assume that migrants have full information about the host country and no revision of migration plans happen. The only paper that assumes migrants may have incomplete information and thus revise their plans is McCall and McCall (1987), who design a multiarmed bandit sequential model of migration and job search. Their theoretical foundation is in line with models of incomplete information, where migrants do not know with certainty the quality of their match with the destination country and thus find it optimal to remigrate once they realize a mismatch. Stark (1995) shows that under asymmetric information, return migration may arise due to reinstatement of informational symmetry, that leads low skilled workers to return as they are no longer pooled with the high skilled workers. Overall, this branch of literature reveals that optimal migration duration or the probability of return is governed by the relative success and/or failure of an individual with regards to his own personal history or social environment.

Becker and Rayo (2007) argue that happiness or satisfaction is a measurement tool to rank alternative actions. They show that habit formation, peer comparisons and prior expectations concerning successes along with cultural and social factors influence the level of happiness that an individual derives from an economic outcome. Thus, it can be argued that individuals use subjective well-being or happiness to rank alternative destinations before making a migration decision. In this paper, we explore the relationship between satisfaction and migration duration. This paper extends previous literature by exploring proxies of well-being other than life satisfaction and by using the intended duration of migration in years instead of binary or ternary stay intentions.

3 Data and Estimation Strategy

For the purposes of our empirical exercise, we use survey data from the German Socio-Economic Panel (GSOEP). Although the survey started in 1984, immigrants were only included in 1995, while the questions regarding migrants' intentions to stay in Germany were asked from 1996 onwards. Post 2010 the question on stay intentions was asked biannually, instead of annually, restricting our analysis to the period 1996–2010. We limit our analysis to migrants between 25 and 65 years of age, who were household heads and respondents of the survey.

We investigate whether SWB affects the intended duration of stay of migrants at the destination country. In particular, we explore whether SWB impacts (1) the intention to stay temporarily vs permanently, and (2) the intended duration of stay (in years) of temporary migrants. In addition to the four different SWB measures, i.e. satisfaction with (1) life, (2) household income, (3) work, and (4) dwelling, we also use two variables expressing sources of worry for migrants: whether they are concerned with hostility towards immigrants and whether they have experienced disadvantages due to origin. Positive feelings regarding life, income, work and dwelling should encourage migrants to stay longer, or permanently for that matter, while higher hostility and/or disadvantages due to origins make it difficult for migrants to integrate into the destination country and thus discourage them from prolonging their stay. Other factors that could affect the decision to migrate temporarily or permanently are family background and individuals' demographic and job characteristics. It is reasonable to argue that wage differentials between the host and the origin country can be main drivers of migration. To account for this we include in our estimation the difference in real per capita income between the source country and Germany. Real GDP per capita data is measured at constant US dollars (PPP) and comes from the World Bank World Development Indicators database. Income gaps between any individual and his/her peers is also expected to affect the decision to stay. To proxy for peer income we use the average income of individuals of similar profile: same education level, age category, gender and country of origin.

The GSOEP survey asked migrants whether they intend to stay in Germany forever. If the answer was positive, we code them as having intentions to stay permanently, while if they answered no, we code their intentions to stay as temporary. In the latter case, the migrants were then asked how many years they plan to stay. Table 1 shows the transition probabilities for stay intentions. Of all those who reported an initial intent to stay for at least 2 years, 19.1% intended to stay for 2 years, 8.4% intended to stay for 3 years, 0.8% intended to stay for 4 years and so on. Among those who initially intended to stay for 1 year, 33.3% report an intent to stay for one additional year, while 68%, when asked the year after, reported an intent to stay for 10 or more years. Thus two important conclusions stem out of Table 1. Individuals adjust the duration of intended stay every year and for some these adjustments are quite significant in magnitude while for others they are minimal if any. This paper seeks to analyze the role of different SWB proxies on the variation of intended duration of stay.

In the GSOEP survey, individuals are asked to assess their overall satisfaction with life, in addition to a number of different aspects of life, on a scale from 0 to 10 (min-max), similar to the Cantril ladder. Respondents were also asked how often they are worried about disadvantages due to origin, and hostility, while possible answers were never, seldom or often (coded as 3, 2, and 1 respectively). Figure 1 shows the Epanechnikov kernel density of different measures of SWB according to intentions to stay temporarily or permanently. The figure shows the probability mass, measured on the vertical axis, of different

Table 1 Year to year transition in stay intentions

No of years in migration	1	2	3	4	5	6	7	8	9	10	Total
1	0	33.33	0	0	0	0	0	0	0	66.67	100
2	0	19.08	8.4	0.76	3.05	0	0	0	0	68.7	100
3	0	17.42	13.64	6.06	7.58	1.52	0	0.76	0	53.03	100
4	0	4.65	20.93	4.65	13.95	2.33	0	2.33	0	51.16	100
5	0	4.59	8.16	3.57	14.8	2.55	0	2.04	0	64.29	100
6	0	3.92	13.73	9.8	13.73	5.88	1.96	1.96	0	49.02	100
7	0	0	0	0	9.09	13.64	4.55	0	0	72.73	100
8	0	0	0	0	14.29	0	3.57	0	3.57	78.57	100
9	0	0	0	0	0	0	0	0	100	0	100
10	0.06	0.51	0.47	0.17	0.85	0.26	0.15	0.12	0.02	97.4	100
Average	0.006	8.35	6.533	2.501	7.734	2.618	1.023	0.721	10.359	60.157	

Column 1 presents number of years already in migration, while row 1 presents number of years of intended future stay. All instances of intended duration of stay of 10 years or more are aggregated into the same category

satisfaction levels (measured on the horizontal axis) for individuals expressing interest to migrate temporarily (red line) versus permanently (blue line). We see that for most controls (top 4 windows) the majority of the observations is around the value of seven to eight, with very few observations on the lower end of the distribution. Individuals who have higher satisfaction levels with life, work and dwelling are more inclined to stay permanently in Germany as compared to individuals who intend to stay temporarily. The relationship

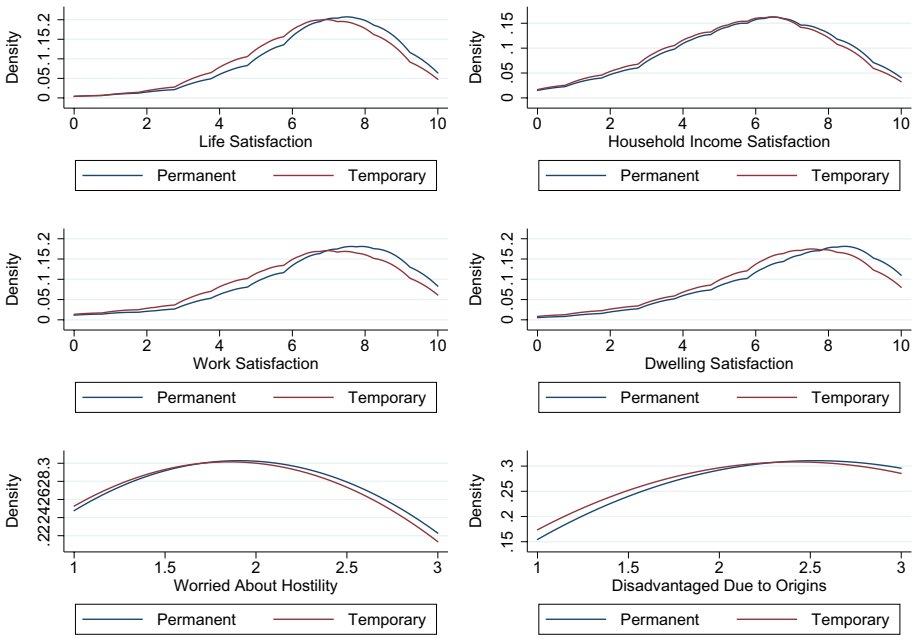

Fig. 1 The figure shows the Epanenichikov kernel density estimate of different subjective well-being by migrants' intentions to stay. (Color figure online)

Table 2 Descriptive statistics: averages—SE in parenthesis

	Temporary	Permanent	Total
Stay intentions (years)		8.93 (7.33)	
Satisfaction with life at today	6.73 (1.71)	7.14 (1.65)	7.02 (1.68)
Satisfaction with household income	5.99 (2.14)	6.08 (2.13)	6.06 (2.13)
Satisfaction with dwelling	6.85 (2.29)	7.24 (2.17)	7.13 (2.21)
Satisfaction with work	6.62 (2.05)	7.02 (2.07)	6.90 (2.07)
Average regional satisfaction with housework of German born	5.86 (2.34)	6.11 (2.34)	6.03 (2.34)
Worried about hostility to foreigners	1.87 (0.71)	1.90 (0.69)	1.89 (0.70)
Disadvantages due to origin	2.39 (0.64)	2.44 (0.63)	2.42 (0.63)
Parents in Germany	0.013 (0.11)	0.014 (0.12)	0.014 (0.12)
Year since migration	22.8 (9.62)	18.0 (10.1)	19.4 (10.2)
Spouse in Germany	0.11 (0.03)	0.01 (0.08)	0.05 (0.19)
Male	0.62 (0.49)	0.60 (0.49)	0.61 (0.49)
Married	0.85 (0.35)	0.84 (0.37)	0.84 (0.37)
Number of years of education	9.64 (3.20)	10.7 (2.99)	10.4 (3.09)
Number of children in household	0.97 (1.11)	1.17 (1.20)	1.11 (1.18)
White-collar	0.19 (0.39)	0.26 (0.44)	0.24 (0.42)
Part-time	0.67 (0.47)	0.64 (0.48)	0.65 (0.48)
Total income	21,724.6 (21,144.1)	21,089.6 (17,208.7)	21,278.0 (18,463.6)
Peer income	17,466.9 (15,332.2)	17,560.1 (12,685.7)	17,532.4 (13,523.1)
Difference in GDP	2.20 (1.33)	2.51 (1.05)	2.42 (1.15)
Young	0.29 (0.45)	0.35 (0.48)	0.33 (0.47)
Age of individual	43.0 (10.1)	40.6 (9.44)	41.3 (9.70)
In good health	0.50 (0.50)	0.60 (0.49)	0.57 (0.50)
Eastern Europe	0.20 (0.40)	0.39 (0.49)	0.33 (0.47)
Turkey	0.31 (0.46)	0.26 (0.44)	0.27 (0.45)

Table 2 (continued)

	Temporary	Permanent	Total
Observations	5145	10,066	15,211

The "satisfaction" variables are all coded from 0 to 10 (with 0 being extremely unhappy and 10 being very happy). The "worried about" variables are coded from 1 to 3 (with 1 being very concerned and 3 being not concerned at all). Differences in GDP between Germany and country of origin is in trillions. The data on GDP is extracted from the World Development Indicator database. Peer income is calculated by groups depending on age, education, sex and country of origin. Individual is recorded as young when his or her age is between 25 and 35 years old. Individual is recorded as in good health if they record that their health is good or very good and do not have any chronic health conditions. Average regional satisfaction of German born with housework is calculated by averaging the satisfaction with the amount of housework reported by those with no migration background living in the same region as the migrants in a given year

Table 3 Heterogeneity in migrants' feelings of hostility based on the region of origin

Turkey	1.715 (0.687)
Eastern Europe	1.946 (0.699)
Other parts of Europe	2.005 (0.719)
Other countries	1.928 (0.707)
Total	1.898 (0.710)

between the other proxies of SWB (satisfaction with income, hostility towards immigrants and disadvantages faced due to origins) and intentions to stay is not clear in Fig. 1.

Table 2 exhibits the summary statistics of our data. After excluding individuals below the age of 25 and over 65 we are left with a sample size of 15,211 of which 66% expressed intentions to stay permanently while the rest stated temporary stay intentions. The maximum number of years over which we observe any individual migrant is 15. 50% of the migrants are observed for 4 years or less. Among the temporary migrants, the average intended stay duration is about 8.9 years. Overall, Table 2 shows that migrants with higher satisfaction with life in Germany express intentions for permanent stay. Migrants who are worried about being discriminated against due to origins or feel that Germans are hostile towards them express intentions of temporary stay more often. Migrants with more years of education and more children in the household, express permanent stay preferences. Higher income migrants generally intend to stay temporarily, which is consistent with the past literature (Dustmann 1997), which finds that temporary migrants tend to maximize their labor market participation. It is more likely for migrants who have their parents in Germany to intend to stay permanently and less likely for migrants who have their spouse in Germany to intend to stay permanently. Migrants working in part-time jobs are more likely to intend to stay temporarily. Migrants from Turkey intend to stay temporarily rather than permanently, while the opposite holds for migrants from Eastern Europe.

Table 3 shows summary statistics for migrants' feelings of hostility based on their region of origin. Lower values indicate higher frequency of occurrence of such feelings. Averages exhibit that migrants of Turkish origin feel hostility more often when compared

with migrants from all other regions: (1) Eastern Europe, (2) other European countries, and (3) all other countries. Migrants from Turkey are also less likely to have permanent stay intentions when faced with higher hostility.[2]

To analyze the effect of happiness on migrants' intentions to stay, we are confronted with the problems of endogeneity and sample selection. Theory predicts that unobservable characteristics, such as the mental mindset of individuals, might affect both stay duration and well-being measures. Similarly sample selection arises due to the unbalanced nature of the panel data or when we restrict our sample to only temporary migrants. Under the assumption of balanced panel data our main model of interest is:

$$y_{it} = \psi_i + \beta X_{it} + \epsilon_{it}, \quad t = 1, \ldots, T \tag{1}$$

and leads to the standard fixed effects estimator under the common assumption of strict exogeneity of the covariates (Wooldridge 2010). $y_{it} = 1$ if a migrant intends to stay temporarily in the destination country, and 0 otherwise. We assume that ϵ_{it} follows a normal distribution while X_{it} is a vector of controls that includes, in addition to the SWB proxies, monthly income, peer income, age, marital status, number of children in household, education level, dummies for whether the parents and the spouse live in Germany, dummies for white-collar and part-time job, country of origin, the number of years since migration, differences in real per capita GDP between Germany and the country of origin, regional dummies, time dummies, and interactions of the variables with time dummies.

In the case when one deals with an unbalanced panel, the key assumption is

$$E(\epsilon_{it} \mid X_{it}, \psi_i, s_i) = 0, \quad t = 1, \ldots, T \tag{2}$$

The unbalanced nature of the data leads to selection bias, when information is not available for a full set of data. According to Wooldridge (2010), to allow for unbalanced panels, one needs to introduce a series of selection indicators for each i, $s_{i1}, \ldots, s_{1T}$, where $s_{it} = 1$ if time period t for unit 1 can be used in the estimation. Hence, when (x_{it}, y_{it}) are fully observable then $s_{it} = 1$, otherwise $s_{it} = 0$. Wooldridge (2010) shows that one way to characterize the FE estimator on the unbalanced panel is to multiply equation (1) through by the selection indicator and then subtract the average $\overline{y_i} = \psi_i + \beta\overline{X_i} + \overline{\epsilon_i}, t = 1, \ldots, T$ where $\bar{X}_i = \frac{1}{T}\sum_1^T X_{it}$ denotes the time averages of all the covariates for individuals. Then the equation of interest becomes:

$$y_{it} = \psi + \beta X_{it} + \phi\bar{X}_i + \epsilon_{it} \tag{3}$$

and the coefficients can be consistently estimated through pooled OLS.

Assumption (2) implies that observing a data point at period t is not systematically related to the idiosyncratic residuals, ϵ_{it}. Under assumption (2) fixed effects remains a consistent estimator. However, this assumption is rather strong as it implies strict exogeneity of selection, along with exogeneity of the covariates, conditional on ψ_i (Wooldridge 2010). Exogeneity of selection, stemming from the zero correlation assumption between X_{ir} and ϵ_{it}, can hold if selection in every t is independent of the covariates and idiosyncratic errors for all $r, t = 1, \ldots, T$ in the population.

The findings reported by Wooldridge (2010) do not carry over to unbalanced panels when selection may be correlated with heterogeneity. In this case pooled OLS will produce

[2] Results available upon request.

Table 4 Hausman type test between linear probability model and Probit models

	Life	Household income	Work	Dwelling	Hostility	Disadvantage
χ^2	48.86	45.56	29.93	55.54	47.90	54.82
p value	0.02	0.04	0.55	0.00	0.03	0.00

inconsistent results, both in the case of FE and RE. In addition, this method can never be used for nonlinear models.

In our context, exogeneity of selection holds iff at every t, all information in (y_{it}, X_{it}), that we observe, does not depend on X_{it} and ϵ_{it}. It is reasonable to argue that whether individual i participates in the survey at time t, depends on observable individual characteristics such as happiness, age, gender, employment status, marital status, intentions to stay etc. and/or other unobservables. For example, individuals with lower SWB and/or intentions to leave the host country sooner, are expected to leave earlier and thus exhibit $s_{it} = 0$ as opposed to individuals who are happier and intend to stay longer. If this argument is correct, it invalidates assumption (2), making the FE (and the RE) estimators inconsistent.

Wooldridge (2010), building on the previous work of Mundlak (1978) and Chamberlain (1984) conditions the model on selection history making use of exchangeable functions as suggested by Altonji and Matzkin (2005) for the balanced panel case, and shows that pooled OLS can now be used to consistently estimate the coefficients of interest through the equation

$$y_{it} = \psi_i + \beta X_{it} + \left[\left(\overline{X}_i - \mu_{\overline{X}_i}\right) \otimes X_{it}\right]\eta + \epsilon_{it}, \quad t = 1, \ldots, T \tag{4}$$

where $\mu_{\overline{X}_i} = E(\overline{X}_i)$. Again as a special case, if η is zero, Eq. 3 collapses to the FE case.

This correlated random effects method allows selection and covariates to be correlated with the unobserved heterogeneity that interacts with the observable covariates in unbalanced panels, as we expect to be the case in our study.

When we analyze the impact of happiness on the migrants' intentions to stay temporarily vs permanently, (4) is estimated by a correlated random effects linear probability model[3] β includes the impact of SWB, while η is the effect of unobserved heterogeneity on the dependent variable.

Next, we aim to address endogeneity by estimating an instrumental variable fixed effects model. We instrument for life satisfaction using the average satisfaction with housework of Germans with no migration background living in the same region. We argue that average happiness of those living around us can affect our individual happiness, however we wouldn't expect it to affect our migration/stay intentions. It is unlikely that individuals will want to re-migrate or return home in response to changes in satisfaction with housework of their German born neighbors.

To address correlated unobserved effects, sample selection and endogenous regressors, we use the methodology introduced by Semykina and Wooldridge (2010). In the presence

[3] We also estimate the model as a correlated random effect probit model but a Hausman type specification test selects the linear probability model as the better model (Table 4 presents the results). The results do not change substantially between the two models as shown in Tables 5 and 6.

Table 5 Subjective well being and probability of staying permanently in a fixed effect linear model

	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Satisfaction with life	0.00913* (4.14)						
Satisfaction with household income		0.00115 (0.62)					
Satisfaction with work			0.00580* (2.74)				0.00632* (2.59)
Satisfaction with dwelling				0.00552* (3.09)			0.00347 (1.35)
Worried about hostility					0.0234* (4.55)		0.0200* (2.74)
Disadvantaged due to origins						0.0264* (4.14)	0.0124 (1.48)
Observations	12,872	12,789	8250	12,852	12,727	11,696	8250

The columns report the marginal effects. t statistics are in parentheses. + refers to significance at 10% and * refers to significance at 5%. Variables that are not reported include individual income, years of education, dummy for parents in Germany, dummy for being married, number of children in the household, years since migration, dummy for working in white collar job, dummy for working in part-time job, dummy for spouse being in Germany, age, differences in real GDP per capita between Germany and the country of origin, average income of people of same education, age, sex and country of origin, dummy for being from Turkey, dummy for being from Eastern European countries, the survey year and the regional dummies

Table 6 Subjective well being and probability of staying permanently in a correlated random effects probit model

	(1)	(2)	(3)	(4)	(5)	(6)
Satisfaction with life at today	0.0531* (3.70)					
Satisfaction with household income		0.00891 (0.76)				
Satisfaction with work			0.0402* (2.75)			
Satisfaction with dwelling				0.0299* (2.68)		
Worried about hostility to foreigners					0.163* (4.98)	
Disadvantages due to origin						0.181* (4.83)
Observations	12,872	12,789	8250	12,852	12,727	11,696

The columns report the marginal effects. t statistics are in parentheses. + refers to significance at 10% and * refers to significance at 5%. Variables that are not reported include male dummy, individual income, years of education, dummy for parents in Germany, dummy for being married, number of children in the household, years since migration, dummy for working in white collar job, dummy for working in part-time job, dummy for spouse being in Germany, age, differences in real GDP per capita between Germany and the country of origin, average income of people of same education, age, sex and country of origin, dummy for being from Turkey, dummy for being from Eastern European countries, the survey year dummies, regional dummies and the mean values of all the covariates (except the male dummy, regional dummies and the survey year dummies)

of exogenous instruments, consistent coefficients can be estimated by including the inverse Mills ratio in the correlated random effects model.

$$y_{it} = \psi_i + \beta X_{it} + \left[\left(\overline{X}_i - \mu_{\overline{X}_i}\right) \otimes X_{it}\right]\eta + \gamma\lambda_{it} + \epsilon_{it}, \quad t = 1, \ldots, T \tag{5}$$

where λ_{it} denotes the inverse Mills ratio of individual i at time t. The inverse Mills ratios are calculated for each t after using a probit model to estimate the equation, $P(\nu_{it} = 1|Z_i) = \Theta(Z_{it}\delta_t + \overline{Z}_i\phi_t)$ and where Z_{it} includes X_{it} as a subset.

In the second specification, when we investigate the marginal effects of life satisfaction on intended stay duration, we restrict the sample to only temporary migrants. Temporary migrants are unlikely to be a random sample of the population and consequently, selection bias needs to be addressed. In this specification y_{it} denotes the years of intended stay among temporary migrants and ν_{it} refers to the probability of being a temporary migrant. We estimate the model using a correlated random effect linear model as a start. X_{it} and $\bar{X}_i$ have the same interpretations as above. As previously, we estimate an instrumental variable fixed effects model, where we instrument life satisfaction by an indicator variable which takes a value of 1 if an individual reports to be in good or very good health and 0 otherwise. We continue by estimating Eq. (5) correcting for both endogeneity and sample selection.

4 Results

In Table 6 we exhibit the results of specification (4), using the correlated random effects probit model to estimate the impact of happiness on migrants' intentions to stay temporarily vs permanently in the destination country. We find that the probability of staying permanently increases with life, work, and dwelling satisfaction. Migrants are also more likely to stay permanently in Germany if they are less worried about hostility faced by foreigners and do not feel disadvantaged due to origin. An one unit increase in life satisfaction is associated with five percentage points increase in the probability of permanent stay intention. Looking into the different components of life satisfaction, we find that one unit increase in work satisfaction increases the probability of permanent stay by 4% points, while a marginal increase in satisfaction with dwelling increases the probability of permanent stay intentions by 3% points. Decrease in feelings of hostility towards foreigners and disadvantages due to origins can lead to 16 and 18% points increase in the probability to intend to stay permanently respectively. For other controls, we find that higher education decreases the intentions of staying permanently in the destination country, which may be due to higher returns to education in the source countries. People from Eastern Europe are also more likely to intend to stay permanently. However, having parents in Germany increases the probability of people staying permanently.[4]

[4] Specification 4 is also estimated as a linear probability model. Although all the results hold, the coefficient estimates differ in magnitude. For example, in the correlated linear random effects model, one unit increase in life satisfaction increases the probability to intend to stay permanently by about 0.8% points, while in the linear probability model one unit increase in work satisfaction lead to 0.5% points increase in the probability to intend to stay permanently. A Hausman type specification test selects the linear probability model as a better model over the probit, as shown in Table 4 (Results available on request.). Consequently, we concentrate on the linear probability model for the rest of the estimations. The χ^2 of joint significance provides evidence that the mean variables belong to the model. The results are available upon request

Table 7 Effect of different well-being measures on the probability of staying permanently by gender

	M	F	M	F	M	F	M	F	M	F	M	F
Life	0.0081* (2.55)	0.0092* (2.32)										
Income			− 0.0002 (− 0.08)	− 0.0016 (− 0.57)								
Work					0.007* (2.33)	0.0052 (1.52)						
Dwelling							0.0056* (2.01)	0.0076* (2.74)				
Foreigners									0.0201* (2.64)	0.0287* (3.84)		
Origin											0.0322* (3.72)	0.0367* (3.86)
Observations	6543	6329	6492	6296	4895	3354	6520	6331	6469	6258	5985	5711

M Stands for male and F for femaleThe above table only reports the satisfaction variables. The actual variables are the same as the previous tables but due to space limitations, we shortened the name of the variables. t statistics are in parentheses. + refers to significance at 10% and * refers to significance at 5%. Variables that are not reported include individual income, years of education, dummy for parents in Germany, dummy for being married, number of children in the household, years since migration, dummy for working in white collar job, dummy for working in part− time job, dummy for spouse being in Germany, age, differences in real GDP per capita between Germany and the country of origin, average income of people of same education, age, sex and country of origin, dummy for being from Turkey, dummy for being from Eastern European countries, the survey year dummies , regional dummies and the mean values of all the covariates (except the regional dummies and the survey year dummies)

Table 8 The effect of subjective well being on the intended duration of stay in a fixed effect linear model

	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Satisfaction with life	0.0285+ (1.83)						
Satisfaction with household income		0.0488* (4.07)					
Satisfaction with work			0.00536 (0.38)				
Satisfaction with dwelling				0.0177 (1.61)			
Worried about hostility					0.00466 (0.14)		
Disadvantaged due to origins						0.103* (2.68)	
Observations	1112	1106	701	1106	1106	1112	

The columns report the marginal effects. t statistics are in parentheses. + refers to significance at 10% and * refers to significance at 5%. Variables that are not reported include individual income, years of education, dummy for parents in Germany, dummy for being married, number of children in the household, years since migration, dummy for working in white collar job, dummy for working in part-time job, dummy for spouse being in Germany, age, differences in real GDP per capita between Germany and the country of origin, average income of people of same education, age, sex and country of origin, dummy for being from Turkey, dummy for being from Eastern European countries, the survey year and the regional dummies

We next separate our sample by gender and re-run all the regressions presented in Table 6 as the linear correlated random effects model. Table 7 shows that our main findings on the positive effects of life, work and dwelling satisfaction in addition to the negative effect of the disadvantages due to origin on the probability of staying permanently in Germany, hold for both genders. In addition, two new results appear. For women, the physical presence of their spouse in Germany has a positive and significant effect on the probability of staying permanently in the host country while Turkish origin has the opposite effect. For men, we find that it is the physical presence of parents—rather than spouse—in Germany that reinforces the permanent stay intention (Table 8).

Employment opportunities or unemployment rates are expected to play an important role in migrants' decisions to stay longer, and should thus be considered. Unemployment rates in Germany rose on average until about 2005 and then fell steadily. To capture any effect of such trends we suggest an additional exercise that should capture the effect of increasing or decreasing (good vs bad labor market conditions) unemployment rates. In particular, we split our sample into two sub-samples, pre and post 2005, and see whether our results hold. Tables 9 and 10 reveal that our main findings are driven primarily by the period before 2005 when the labor market in Germany was tight as results from the period after 2005 are for the most part statistically insignificant. These results suggest that when the labor market is tight meaning unemployment is rising (1996-2005), higher work satisfaction leads migrants to hold on to their job which pushes them to stay longer or permanently. On the other hand, when the labor market is solid and unemployment is falling, migrants exhibit greater preferences for temporary stay, even when satisfied with their job, which could reflect their tendency to look for outside opportunities.

Specification (4) suffers from the problems of endogeneity and selection bias. The problem of endogeneity arises due to the possibility of unobserved variables affecting both the well-being controls and the intentions of migrants. We try to account for endogeneity by

Table 9 Effect of different satisfaction on temporary stay intentions before and after 2005

	Before 2005						After 2005					
Life	0.00977* (3.98)						− 0.000455 (− 0.08)					
Income		0.000943 (0.46)						− 0.00303 (− 0.59)				
Work			0.00816* (3.42)						− 0.00982^{+} (− 1.71)			
Dwelling				0.00486* (2.49)						0.0000142 (0.00)		
Foreigners	0.0225*				(3.94)		0.0208				(1.52)	
Origins						0.0303* (4.33)						0.0126 (0.69)
Constant	0.546* (4.66)	0.628* (5.39)	0.569* (3.78)	0.589* (5.06)	0.600* (5.14)	0.533* (3.33)	− 0.0936 (− 0.16)	− 0.0742 (− 0.12)	− 0.393 (− 0.49)	− 0.118 (− 0.20)	− 0.0796 (− 0.13)	− 0.445 (− 0.66)
Observations	10,720	10,647	6815	10,699	10,601	9731	2029	2021	1385	2032	2002	1837

t Statistics in parentheses

$^{+}p < 0.10$, $^{*}p < 0.05$

Table 10 Effect of different satisfaction on stay durations before and after 2005

	Before 2005						After 2005					
Life	0.0348* (2.08)						− 0.0418 (− 0.81)					
Income		0.0465* (3.72)						0.0156 (0.40)				
Work			0.00398 (0.26)						− 0.00177 (− 0.04)			
Dwelling				0.0272* (2.31)						− 0.0315 (− 0.89)		
Hostility					0.00939 (0.28)						0.133 (0.87)	
Origins						0.0624 (1.56)						0.515* (4.11)

t Statistics in parentheses

$^{+}p < 0.10$, * $p < 0.05$

Table 11 Subjective well being and probability of staying permanently after accounting for endogeneity in a fixed effect model

	(1)	(2)	(3)	(4)	(5)	(6)
Satisfaction with life at today	0.0319* (1.97)					
Satisfaction with household income		0.0248^{+} (1.91)				
Satisfaction with work			0.0255 (1.31)			
Satisfaction with dwelling				0.0150* (1.99)		
Worried about hostility to foreigners					0.234^{+} (1.91)	
Disadvantages due to origin						0.320^{+} (1.93)
Observations	12,809	12,750	8226	12,812	12,667	11,639
F-stat	38.6	72.99	11.86	26.01	7.48	3.06

All the well-being measures are instrumented by average satisfaction of German born individuals with housework. t statistics are in parentheses. + refers to significance at 10% and * refers to significance at 5%. F-stat refers to the F-stat of the first stage regression. Variables that are not reported include individual income, years of education, dummy for parents in Germany, dummy for being married, number of children in the household, years since migration, dummy for working in white collar job, dummy for working in part-time job, dummy for spouse being in Germany, age, differences in real GDP per capita between Germany and the country of origin, average income of people of same education, age, sex and country of origin, dummy for being from Turkey, dummy for being from Eastern European countries, the survey year and the regional dummies

instrumenting the well-being variables using the average satisfaction with housework of individuals born in Germany. Average satisfaction of locally born people with housework is expected to correlate with satisfaction levels of migrants living in the same area, however, we don't expect it to correlate with migration intentions. Selection bias arises as a result of the unbalanced nature of our data since we do not observe individuals in all time periods. Tables 11 and 12 show that our overall results hold after instrumenting the well-being variables in a fixed effects model and accounting for selection due to unbalanced data. Table 12 shows the results of specification (5) after instrumenting for the well-being variables. The χ^2 in Table 12 is for testing the joint significance of the means of the variables, the λs and the interaction terms. The p value suggests that we can reject the null of redundancies of these variable in the model. The F-stats reported in Table 11 are those of the first stage regression of the IV methods which show that the instrument used is relevant for the first four models but not so for the models containing the hostility against foreigners and the disadvantages due to origins controls (Table 13).

Table 14 presents our findings from the correlated effects linear model investigating the marginal effects of well-being on the years of intended stay for temporary migrants in Germany. Satisfaction with life and household income have a positive and statistically significant effect on the intended years of stay, while disadvantages due to origins have a negative significant effect. Temporary male migrants intend to stay fewer years as compared to their female counterparts. Personal income increases stay duration, while education decreases stay intentions significantly suggesting that while higher earnings at the destination attract

Table 12 Effects of different satisfaction on the probability of staying permanently taking into account of endogeneity and selection

	(1)	(2)	(3)	(4)	(5)	(6)
Satisfaction with life at today	0.0104* (4.17)					
Satisfaction with household income		0.00306 (1.60)				
Satisfaction with work			0.00576* (2.32)			
Satisfaction with dwelling				0.00652* (3.47)		
Worried about hostility to foreigners					0.0216* (4.30)	
Disadvantages due to origin						0.0279* (4.30)
χ^2	5.90	6.12	5.61	6.63	5.36	5.95
p value	0.00	0.00	0.00	0.00	0.00	0.00

All the well-being measures are instrumented by average satisfaction of German born individuals with amount of housework. The model is estimated using the method in Semykina and Wooldridge (2010) which takes into account of selection due to unbalanced panel and the endogeneity of the well-being measures. t statistics are in parentheses. + refers to significance at 10% and * refers to significance at 5%. χ^2 of the joint significance of the means and the lamda are given on the table. Variables that are not reported include the survey year dummies, income, peer income, differences in GDP between the home country and Germany, dummy for parents in Germany, dummy for spouse in Germany, dummy for being married, years of education, dummy for being young, years since migration, dummy for working in white-collar job, dummy for working part-time and means of all variables excluding the survey years dummies

migrants to stay longer, higher education of the migrants offers better perspectives elsewhere. Number of years since migration and the presence of spouse in Germany negatively affect the years of intended stay.

All 6 specifications reported in Table 14 are re-examined by gender, and results are presented in Table 15. The results of Table 14 are found to be gender specific. While satisfaction with life and household income increase the duration of stay for male temporary migrants, it is only satisfaction with dwelling that seems to matter for temporary female migrants. For males, higher education and the presence of spouse subdue the intended stay duration while for females, higher peer income in the host country urges them to leave early. More children in the household may also prolong females to stay in the host country. Overall, the results suggest that female migrant's intended stay duration is highly influenced by family members and reference groups as compared to male migrants.

Table 16 reports our results from specification (1) for the marginal effects of SWB on intended years of stay, after instrumenting for the well-being variables by a dummy for good health. Our main findings on the positive effect of life satisfaction hold although the effects of the other well-being measures become insignificant. The F-stat of the first stage regression of the IV methods (shown at the bottom of the table) show that the instrument used is relevant for all six models as they are all above the indicated threshold of 10. Our estimation methods so far suffer from selection bias as we are restricting our sample size to temporary migrants, who may not be a random sample of individuals. We correct for this using the method developed in specification (5) and following Semykina and Wooldridge

Table 13 Testing exogeneity of the instruments

	Permanent versus temporary						Durations of temporary stay					
	Life	Income	Work	Dwelling	Foreigners	Origins	Life	Income	Work	Dwelling	Foreigners	Origins
Instruments												
Health							0.0721	0.0809	0.0432	0.0809	0.0953	0.0857
							(1.05)	(1.20)	(0.46)	(1.19)	(1.38)	(1.26)
Housework	0.00271	0.00351	0.00250	0.00262	0.00351	0.00399						
	(1.59)	(1.05)	(1.20)	(1.51)	(1.07)	(1.16)						
Observations	12,668	12,610	8165	12,671	12,526	11,498	1127	1121	713	1121	1121	1123

The housework variable refers to the average satisfaction level with housework among German borns. t statistics are in parentheses. + refers to significance at 10% and * refers to significance at 5%. Variables that are not reported include the survey year dummies, the respective subjective well-being variables, income, peer income, differences in GDP between the home country and Germany, dummy for parents in Germany, dummy for spouse in Germany, dummy for being married, years of education, dummy for being young, years since migration, dummy for working in white-collar job, dummy for working part-time and means of all variables excluding the survey years dummies

Table 14 Correlated random effects of different satisfaction measures on the intended duration of stay

	(1)	(2)	(3)	(4)	(5)	(6)
Satisfaction with life at today	0.0336* (2.28)					
Satisfaction with household income		0.0305* (2.38)				
Satisfaction with work			− 0.000429 (− 0.03)			
Satisfaction with dwelling				0.0126 (1.29)		
Worried about hostility to foreigners					0.0172 (0.54)	
Disadvantages due to origin						0.106* (2.61)
Observations	1150	1144	716	1144	1144	1150

t Statistics are in parentheses. + refers to significance at 10% and * refers to significance at 5%. Variables that are not reported include the survey year dummies and the mean values of all the covariates (except the male dummy and the survey year dummies). χ^2 and the *p* value given is the for testing the joint significance of the mean of the variables. Variables that are not reported include male dummy, individual income, years of education, dummy for parents in Germany, dummy for being married, number of children in the household, years since migration, dummy for working in white collar job, dummy for working in part-time job, dummy for spouse being in Germany, age, differences in real GDP per capita between Germany and the country of origin, average income of people of same education, age, sex and country of origin, dummy for being from Turkey, dummy for being from Eastern European countries, the survey year dummies, regional dummies and the mean values of all the covariates (except the male dummy, regional dummies and the survey year dummies)

(2010). Table 17 reveals the results after accounting for both endogeneity and selection. We find that higher overall life satisfaction encourages temporary migrants to prolong their stay in Germany. The χ^2 reported in Table 17 on the joint significance of the means of the variables, the λs and the interaction terms, suggests that these variables affect the stay duration of temporary migrants.

5 Discussion and Conclusion

We have used the GSOEP data to investigate the relationship between SWB and migration duration intentions in Germany. Using a correlated random effects linear model we find that satisfaction with life, income, work and dwelling increase the probability of staying permanently in Germany, while hostility towards foreigners and disadvantages due to origin have the opposite effect. On the marginal effects of SWB on the duration of intended stay among temporary migrants, using a correlated random effects linear model, we find that life satisfaction encourages migrants to lengthen their stay in Germany. Our results also highlight some interesting differences between males and females in their decisions to stay permanently in the destination. In particular, we show that for female migrants stay duration depends on the performance of the reference group as well as the number of children in the household, while for male migrants the stay duration depends on own performance.

Table 15 Effects of different well-being measures on the intended duration of stay by gender

	M	F	M	F	M	F	M	F	M	F	M	F
Life	0.0364^{+} (1.76)	0.0248 (1.26)										
Income			0.0409* (2.99)	0.0216 (1.20)								
Work					0.0200 (1.24)	− 0.0123 (− 0.70)						
Dwelling							0.0189 (1.49)	0.0243^{+} (1.69)				
Foreigners									0.0592^{+} (1.65)	− 0.0182 (− 0.38)		
Origin											0.0656 (1.42)	0.0796 (1.36)
Observations	601	533	598	530	426	278	598	530	598	530	601	533

M Stands for male and F for femaleThe above table only reports the satisfaction variables. The actual variables are the same as the previous tables but due to space limitations, we shortened the name of the variables. t statistics are in parentheses. + refers to significance at 10% and * refers to significance at 5%. Variables that are not reported include individual income, years of education, dummy for parents in Germany, dummy for being married, number of children in the household, years since migration, dummy for working in white collar job, dummy for working in part-time job, dummy for spouse being in Germany, age, differences in real GDP per capita between Germany and the country of origin, average income of people of same education, age, sex and country of origin, dummy for being from Turkey, dummy for being from Eastern European countries, the survey year dummies , regional dummies and the mean values of all the covariates (except the regional dummies and the survey year dummies)

t Statistics in parentheses

$^{+}p < 0.10$, * $p < 0.05$

Table 16 IV effects of different well-beings on the intended duration of stay

	(1)	(2)	(3)	(4)	(5)	(6)
Satisfaction with life at today	0.191+ (1.92)					
Satisfaction with household income		0.599 (0.91)				
Satisfaction with work			0.265 (1.43)			
Satisfaction with dwelling				0.446 (1.01)		
Worried about hostility to foreigners					− 0.669 (− 1.52)	
Disadvantages due to origin						2.110 (0.87)
Observations	1136	1130	705	1130	1130	1136
F-stat	16.8	15.1	18.2	11.6	14.5	12.9
p value	0.01	0.05	0.01	0.26	0.06	0.05

All the well-being measures are instrumented by a dummy which takes the value of 1 if reported health status is good or very good. t statistics are in parentheses. + refers to significance at 10% and * refers to significance at 5%. F-stat refers to the F-stat of the first stage regression. Variables that are not reported include male dummy, individual income, years of education, dummy for parents in Germany, dummy for being married, number of children in the household, years since migration, dummy for working in white collar job, dummy for working in part-time job, dummy for spouse being in Germany, age, differences in real GDP per capita between Germany and the country of origin, average income of people of same education, age, sex and country of origin, dummy for being from Turkey, dummy for being from Eastern European countries, the survey year dummies , regional dummies and the mean values of all the covariates (except the regional dummies and the survey year dummies)

Depending on government priorities and country needs, mainly in—but not limited to—the labor market, identifying the determinants of stay decisions allows policy makers to formulate policies encouraging or discouraging certain groups to stay in Germany longer. If the government wishes to encourage female migrants to stay in Germany, for social or other reasons, then one way to achieve this goal would be to provide females, maybe through subsidies, access to high quality dwellings since women appear to weigh this aspect of life more heavily. Men with lower education level have a higher tendency to stay in Germany longer, which could be due to the fact that the ones with higher education are more mobile and find more attractive destinations elsewhere. Ideally, the source country would be interested in creating incentives for the high-skilled highly productive employees to stay, for economic and for social reasons.

We acknowledge the obvious differences in legal rights for access and stay in Germany, depending on the country of origin. Turkish migrants are the largest migrant group in Germany mainly due to the guest worker program of Germany between 1961 and 1973. However, in our sample period Turkish migrants face the same policy as most other countries. During the 1996–2010 sample period of our paper, several countries, which we have grouped into the Eastern Europe group, have become members of the EU, and thus access

Table 17 Effects of different satisfaction on the intended duration of stay taking into account of endogeneity and selection

	(1)	(2)	(3)	(4)	(5)	(6)
Satisfaction with life at today	0.0347+ (1.69)					
Satisfaction with household income		0.0103 (0.71)				
Satisfaction with work			0.0150 (0.90)			
Satisfaction with dwelling				0.0208 (1.60)		
Worried about hostility to foreigners					− 0.00126 (− 0.03)	
Disadvantages due to origin						0.0983+ (1.85)
χ^2	5.14	11.57	13.14	6.11	6.24	21.88
p value	0.00	0.00	0.00	0.00	0.00	0.00

All the well-being measures are instrumented by a dummy which takes the value of 1 if reported health status is good or very good. The model is estimated using the method in Semykina and Wooldridge (2010) which takes into account of selection due to restriction to the temporary migrants and the endogeneity of the well-being measures. t statistics are in parentheses. + refers to significance at 10% and * refers to significance at 5%. χ^2 of the joint significance of the means and the lamda are given on the table. Variables that are not reported include the survey year dummies, income, peer income, differences in GDP between the home country and Germany, dummy for parents in Germany, dummy for spouse in Germany, dummy for being married, years of education, dummy for being young, years since migration, dummy for working in white-collar job, dummy for working part-time and means of all variables excluding the survey years dummies

and movement to Germany became legal and free.[5] However, analysis at the country level, is not possible due to observation limitations in our data. This issue raises a limitation in our research that cannot be addressed within the scope of the current study, but would be interesting to examine in future work.

Acknowledgements We thank participants of the 3rd Forum for Research in Economics and Finance at UAEU and two anonymous referees for their comments on an earlier draft. Dr. Marina-Selini Katsaiti is a recipient of United Arab Emirates University (UAEU) Start-Up grant (Grant Number 31B023). The data used in this paper was made available to Dr. Marina-Selini Katsaiti by the German Socio-Economic Panel Study (SOEP) at the German Institute for Economic Research (DIW Berlin), Berlin. Dr. Mrittika Shamsuddin is also a recipient of United Arab Emirates University (UAEU) Start-Up Grant (Grant Number 31B045).

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[5] Eastern Europe includes countries who later joined the EU: Hungary, the Czech Republic, Slovakia, Poland, Estonia, and Lithuania (2004), Bulgaria, Romania (2007), and Ukraine, Moldova, Belarus, Russian Federation, Serbia, Albania, Croatia, and Bosnia (non EU members 1996–2010)

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