

# Selective migration and urban–rural differences in subjective well-being: Evidence from the United Kingdom

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## Abstract

Although more and more people choose to live in (large) cities, people in the Western world generally report lower levels of subjective well-being in urban areas than in rural areas. This article examines whether these urban–rural differences in subjective well-being are (partly) driven by selective migration patterns. To this end, we utilise residential mobility data from the United Kingdom based on 12 waves of the British Household Panel Survey. We explore urban–rural differences in life satisfaction as well as changes in life satisfaction of people moving from rural areas to urban areas (or vice versa), hereby paying specific attention to selection and composition effects. The results show that selective migration can, at least partly, explain the urban–rural subjective well-being differential through the selection of less satisfied people in cities and more satisfied people in the countryside. While the average life satisfaction of urban–rural migrants is higher compared to the life satisfaction of rural–urban migrants, we do not find – on average – long-lasting life satisfaction effects of migration. At the same time, there are differences between sociodemographic groups in that we find that a move from the countryside to the city is positively associated with the life satisfaction of students while it is negatively associated with the life satisfaction of people with a non-tertiary education.

## Keywords

migration, subjective well-being, urbanisation, urban–rural differences

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## 摘要

尽管越来越多的人选择生活在（大）城市，但西方世界的人们普遍表示，城市地区的主观幸福感水平低于农村地区。本文研究了主观幸福感的城乡差异是否（部分）是由选择性移民模式造成的。为此，我们利用了基于12波英国家庭小组调查的英国居民流动性数据。我们探讨了城市和农村在生活满意度上的差异，以及从农村地区向城市地区迁移的人们（或者反向迁移的人们）在生活满意度上的变化，从而特别关注选择和构成效应。结果表明，通过城市中满意度较低的人们和农村中满意度较高的人们的选择，选择性迁移至少可以部分解释城乡主观幸福感的差异。虽然城市-农村移民的平均生活满意度高于农村-城市移民的生活满意度，但平均而言，我们没有发现移民的长期生活满意度效应。同时，不同社会人口群体之间也存在差异，因为我们发现，从农村到城市的迁移与学生的生活满意度正相关，而与受过非高等教育的人的生活满意度负相关。

## 关键词

移民、主观幸福感、城市化、城乡差异

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## Introduction

Over the past decades, cities all around the world have grown considerably in terms of population and economic significance and increasingly people have decided to live in a (large) city (Glaeser, 2011). Although most studies support the idea that the contemporary popularity of city life is mainly motivated by employment reasons, a steadily growing body of literature suggests that consumption factors such as urban amenities, aesthetics and good public services matter as well, particularly in the Western world (Chen and Rosenthal, 2008; Florida, 2003; Glaeser et al., 2001). Cities feature a diversity of consumption amenities which make life outside work more enjoyable, which in turn makes them attractive places to live. Despite the increasing popularity of residing in cities, actual city life is generally associated with lower levels of subjective well-being (SWB) in the Western world (Burger et al., 2020; Easterlin et al., 2011; Okulicz-Kozaryn, 2015). Interestingly, recent studies have found lower levels of SWB in urban areas and higher levels of SWB in rural areas

for Western countries such as the United States (Berry and Okulicz-Kozaryn, 2009, 2011; Glaeser et al., 2016), Canada (Lu et al., 2015), New Zealand (Morrison, 2011), Germany (Botzen, 2016), Italy (Lenzi and Perucca, 2019) and The Netherlands (Burger, 2021).

Although more and more people choose an urban life over a rural life in the Western world, people are on average not happier there and are often less happy in large cities compared to in medium-sized and small cities and villages. Hence, it is interesting to get a better understanding of why so many people choose a city life while at the same time people in (especially) developed countries are generally less happy in urban areas compared to rural areas.

Although various researchers have tried to explain urban-rural differences in SWB (Morrison and Weckroth, 2018; Okulicz-Kozaryn and Mazelis, 2018; Shucksmith et al., 2009; Sørensen, 2014), they did not find conclusive evidence of what actually drives these differences (Burger et al., 2020). On the one hand, the differences can be attributed to urban-rural differences in the

living environment determining quality of life in the place of residence (place-based effects). On the other hand, lower levels of SWB in certain areas can also be explained by selection and composition effects, such as the fact that urban and rural areas attract, and are home to, different sociodemographic groups of people (people-based effects). Particularly, it might be that the unhappier section of the countryside population tends to move to cities in search of a better life. Along these lines, internal migration flows could explain (part of) the urban–rural SWB differences (Burger et al., 2020).

This article explores the role of selective migration patterns as one of the possible explanations for urban–rural differences in terms of SWB in the Western world. We examine urban–rural differences in SWB by analysing internal migration patterns in the United Kingdom (UK). We use panel data from the British Household Panel Survey, which enables us to gauge the life satisfaction (LS) of migrants in the years before and after their move and to analyse alterations in their self-reported LS. This study adds to the existing literature in two distinct ways. Firstly, it is one of the first studies that empirically examines whether urban–rural differences in SWB are, in part, driven by selective migration by following internal migrants over time and utilising panel data. Here, we build on the embarking literature on urban–rural differences in SWB that has started to discuss the underlying reasons and mechanisms behind the urban–rural SWB differential, distinguishing between place-based and people-based effects (see Burger et al., 2020). Secondly, this research aims to shed light on the between-group heterogeneity as for some groups a move to the city might be more favourable than for other groups. Accounting for this between-group heterogeneity provides useful insights on the spatial preferences of certain sociodemographic

groups and can give directions for spatial development policies.

## Related literature

### *Place-based effects*

In the literature on the geography of SWB, a steadily growing body of research discusses various aspects of the living environment driving SWB differences between urban and rural areas (Florida et al., 2013; Okulicz-Kozaryn, 2015; Shucksmith et al., 2009). Geographical and contextual variables that potentially affect SWB include a broad range of variables ranging from social aspects (e.g. social cohesion, exclusion, safety, inequality and deprivation) to environmental aspects (e.g. air pollution, congestion and access to nature) and more economic aspects (e.g. availability of employment and education, access to amenities and services). When looking at SWB differences in the Western world, Burger et al. (2020) found that higher SWB scores in rural areas in Western countries can be explained by higher degrees of community attachment and housing affordability in rural areas. These findings are in line with the work of Sørensen (2014), who concludes that the higher level of social capital in rural areas explains at least part of the urban–rural difference in LS in Europe. Small rural towns characterised by informal social contact and stable, homogeneous populations facilitate strong social networks and high SWB levels. Factors that have been associated with lower SWB levels in cities are partly due to air and noise pollution, congestion, inequality and crime (Okulicz-Kozaryn, 2015). However, urban environments may offer more amenities and economic opportunities (employment and education) and shorter commutes that, in turn, can boost average SWB levels (see Burger et al., 2020). Hence, higher crime rates and feelings of unsafety might lower

individual SWB in cities, but these congestion effects can be balanced by the presence of, and access to, services and amenities, which are positively associated with SWB.

At the same time, there is a lot of heterogeneity within the categories of urban and rural settlements. Indeed, there are examples of ‘social inclusive’ and ‘walkable’ cities (Leyden et al., 2011) where social and spatial inequalities in income and wealth are limited. The English index of multiple deprivation (Ministry of Housing and Communities and Local Government, 2019) shows that deprivation is dispersed across England; there are many deprived areas in both the (rural) outskirts of England as well as in large cities such as London, Liverpool and Manchester.<sup>1</sup> In the UK, rural life is strongly associated with a so-called ‘rural idyll’; a positive image surrounding many aspects of rural lifestyle, community and landscape (Yarwood, 2005). Rural life is generally characterised by the availability of affordable housing, public services and rural amenities, such as green natural environments, and is often considered as an ideal place for raising children or for retired people. However, more remote rural areas have been associated with deprivation, low income and poverty (Phimister et al., 2000), as well as inequality and social exclusion (McAreavey and Brown, 2019). Moreover, rural areas often have a lack of choice to obtain (public) services and good housing at a fair price, to enjoy cultural and recreational activities and amenities and to have access to the range of jobs, services and information available to urban residents (Yarwood, 2005).

### *Composition effects and selective migration*

Apart from place-based effects, the composition of the population may play a role in explaining the urban–rural SWB differences.

Urban and rural residents may differ in terms of personality and socioeconomic position, which are associated with differences in SWB. Using a multilevel modelling approach, Ballas and Tranmer (2012) found for the UK that SWB mostly varies between people and not between places, indicating that compositional effects (the characteristics of people living in a place) mainly account for the variation in SWB between places.

The composition of the population of both urban and rural areas is mainly determined by differences between people who have spent their entire lives in the same place of residence. In this regard, most of the UK population are born and raised in the same city or village as they will die. Nevertheless, selective migration plays a role in altering the composition of the population. With almost 10 per cent of the UK’s population changing their permanent place of residence every year (Office for National Statistics, 2019), selective migration patterns may play a role in unravelling the urban–rural SWB differential.

Migration research is predicated on the assumption that people move because they believe they will be better off elsewhere and they want to improve their lot in one way or another. People who are less satisfied with their life are more likely to move in search of a better life and/or better opportunities (Benson and O’Reilly, 2009). Following Veenhoven (1994), people with lower levels of SWB move towards large cities while smaller cities, suburbs or villages mainly attract people with higher levels of SWB:

The rural people who move to the city are mostly not the ones that cannot make a living in the area where they were born. Typically, they go to the city in search for better chances. Reversely, city dwellers who go ‘back’ to the country do typically well socio-economically, especially the one who moves to suburbs. (Veenhoven, 1994: 46)

Along these lines, people with certain characteristics may sort in specific geographical locations. Research on geographical differences in personality traits indicates that some traits are more prevalent in certain places than in others. Rentfrow et al. (2015) argue that these differences stem from: (1) social influence (traditions, customs, lifestyles and daily practices common to an area affect social norms, which in turn affect people's attitudes and behaviours), (2) ecological influence (the physical environment affects people's thoughts, feelings and behaviours) and (3) selective migration (people migrate to places that satisfy and reinforce their psychological needs). In a study on regional personality differences in Great Britain, Rentfrow et al. (2015) found that certain personality traits (e.g. openness, agreeableness and extraversion) seem to be driven by selective migration, pointing towards the dynamic relationships between personality and the place in which people live. Likewise, Morrison and Weckroth (2018) examined the interface between human values, well-being and the metropolitan environment. They found that the population in metropolitan Finland is made up of individuals with extrinsic or personally focused values (e.g. power and achievement) which are generally negatively correlated with SWB while the residents of non-metropolitan Finland were more likely to identify with intrinsic community or socially focused values (e.g. benevolence and conformity) which are positively correlated with SWB.

In addition to personality, one's socioeconomic situation further determines migration decisions. Cities often attract people in search of a (new) job, varying from immigrants from (developing) countries looking for economic opportunity to young graduates in search of career advancement. Large cities offer plenty of opportunities in terms of employment and career options, or as

Glaeser (2011: 1) puts it, 'urban density provides the clearest path from poverty to prosperity'.<sup>2</sup> There is, however, ample evidence that the urban escalator is not available everywhere and for everyone. Cardoso et al. (2019) raised the question of why so many people have such positive, persistent and possibly overrated expectations about cities, as both the objective socioeconomic outcomes and the subjective experience of urban life tend to compare poorly with the overoptimistic expectations of many urban migrants. In this regard, Knight and Gunatilaka (2010) discussed why rural-urban migrant households settled in urban China have an average happiness score lower than rural households. They examined three hypotheses: migrants had false expectations about their future urban conditions, or about their future urban aspirations, or about their future selves. As the rural-urban migrants draw their reference group from their new surroundings, they have feelings of relative deprivation, and having a relatively low income was shown to reduce their happiness. Moreover, 'people with unobserved and invariant characteristics that reduce happiness have a higher propensity to migrate, in the false expectation that migration will provide a cure, and their continuing unhappiness pulls down the main happiness score' (Knight and Gunatilaka, 2010: 123). In other words, migrants might report lower levels of SWB as they have high but unfulfilled expectations.

### *Between-group heterogeneity*

The relationship between place of residence and SWB is heterogeneous in that different types of people are better suited to different types of environments and people do not rate environmental attributes similarly (Plaut et al., 2002), as some people are better suited to residing in a large city whilst others are better suited to a quiet village. Most

notable are the differences between groups which extend to the point that changes in spatial preferences can be observed within an individual at different stages of life. In general, people make trade-offs between short-lived happiness and goals like long-term career success (Benjamin et al., 2012). Someone may choose a more competitive environment and yet know that this environment will – by opening opportunities and inviting comparisons with high achievers – lead to less satisfaction. For this reason, people might be willing to move to a city which offers plenty of career opportunities but also high costs of living and strong competition, despite recognising that this will lead to less satisfaction (Glaeser et al., 2016; Morrison, 2011).

Besides personal preferences, certain sociodemographic groups are more exposed to the positive (or negative) effects of urban areas or rural areas than others. In this regard, Morrison (2021: 790–791) puts forward the hypothesis that cities in the developed world provide particularly:

necessary infrastructure for realization of returns to tertiary education as a result of the expansion of both the scale and scope of economic and cultural activities. The tertiary educated in turn attract a large number of the less educated who work in the non-tradable sector.

The less educated typically work for low wages and experience long commutes (reducing family and leisure time) because they are outcompeted on the housing market. Support for this hypothesis is found in empirical research, where Morrison and Weckroth (2018) reported that urban agglomeration raises the income and well-being returns for those with tertiary education. Similar evidence is provided by Burger et al. (2020), who found that higher-educated individuals with higher incomes are happier in cities in the Western part of Europe and North America, a finding also

reported in the study by Migheli (2017) using the World Values Survey for Western Europe. Likewise, Carlsen and Leknes (2019) found for Norway that young, single people without children, as well as higher-educated people generally, report higher levels of SWB in more populous cities.

However, urban–rural differences may also vary across generations. Okulicz-Kozaryn and Valente (2019) found that urban unhappiness does not hold for so-called millennials (born between 1982 and 2004). In their study among generations living in the USA over the past 40 years, they found that millennials are the first generation to be more satisfied with urban than with rural life: ‘Arguably, some amenities and some cities would appeal more to Millennials than others, and accordingly, Millennials would be happier there’ (Okulicz-Kozaryn and Valente, 2019: 201). Yet, education level may play a role, as Burger et al. (2020) found for Western Europe and North America that medium and low educated people under 30 are happier in rural areas, while the highly educated in that age group are significantly happier in urban areas.

## Data and methodology

### Data

This study examines the effect of selective migration patterns as a potential driver of urban–rural differences in SWB. We use the British Household Panel Survey (BHPS), a longitudinal dataset of private households in the UK, which enables us to follow people over time.<sup>3</sup> The BHPS is a nationally representative dataset in which the same adults are interviewed each successive year. This study is based on 13 waves of the BHPS spanning from 1996 to 2008. From 1996 onwards, a LS question (as a measure of SWB) was included in the survey, except for the year 2001.

The BHPS attempts to follow all migrants who remain in the UK. Only internal moves within the UK are considered; respondents who moved to the UK from another country or respondents who moved abroad are not included in the sample. Although attrition among migrants is higher than among non-migrants, its extent is relatively small and does not pose a problem for the analysis of geographical mobility (Nowok et al., 2013). About 56 per cent of the internal migrants moved once during the survey period, while the remaining 44 per cent moved multiple times. For both single and multiple migrants, we take the first migration event into account.

### *Dependent and independent variables*

The dependent variable of this study is the self-reported individual LS. This is based on the survey question ‘How dissatisfied or satisfied are you with your life overall?’ on a seven-point scale varying from completely dissatisfied (1) to completely satisfied (7). Respondents were able to respond neutrally by reporting (4), meaning that they were neither satisfied nor dissatisfied. LS is often measured by asking people how satisfied they are with their lives. After all, individuals are in the best position to gauge their own LS. Survey data about LS are generally regarded as valid and reliable (Kahneman and Krueger, 2006), even when using single-item measures like in our study (Cheung and Lucas, 2014). Here, it should be noted that although these single-item measures tend to perform as well as multi-item scales like Diener’s Satisfaction with Life Scale in terms of validity, their reliability is slightly lower (see also Schimmack and Oishi, 2005).

The main independent variable is the place of residence of the respondents, which we divided into either urban or rural residence. The official urban and rural classification of postal codes for England, Wales,

Scotland and Northern Ireland of the BHPS is used to make this distinction between urban and rural areas. Urban areas are defined as settlements with a population of 10,000 or more, and settlements with fewer than 10,000 inhabitants are defined as rural areas.<sup>4</sup> There are several limitations to using a classification based on the population size of administrative units. Unfortunately, the BHPS does not contain information about the density or urbanity or respondents’ self-classification of the size of their place of residence. Another important independent variable is the migration behaviour of the respondents, since we are especially interested in alterations in the LS of people moving between different locations. This study distinguishes between four different groups of internal migrants – (1) urban–rural migrants, (2) rural–urban migrants, (3) urban–urban migrants and (4) rural–rural migrants – as well as (5) urban non-movers and (6) rural non-movers.

### *Methodology and estimation strategy*

To examine whether and to what extent urban–rural differences are driven by selective migration, this study analyses the LS of internal migrants who moved from an urban area to a rural area (or vice versa). We follow the individual’s reported LS scores for a period of seven years; from three years prior to the migration event, the year itself and three years afterwards. To effectively follow alterations in LS over time, we apply a fixed-effects estimation which allows us to measure the effect of migration for one and the same person.<sup>5</sup> More specifically, we estimate the following model:

$$LS_{it} = \alpha_i + U_{it} + M_i + \beta X_{it} + R_{it} + \varepsilon_{it}$$

Where  $LS_{it}$  denotes the life satisfaction of individual  $i$  in period  $t$ . The variable  $U$  denotes the place of residence of individual  $i$  in period  $t$  which is either urban or rural.

The variable  $M$  indicates if individual  $i$  has moved during the survey period.  $X_{it}$  is a vector of time-varying covariates. We control for a large number of individual and household variables that determine people's LS such as age, sex, job status, educational level, marital status, number of children in the household, log of annual household income, social contacts and subjective health. With regional dummies  $R$  we control for spatial differences within the UK based on the 12 NUTS-1 regions in the UK.<sup>6</sup> The individual fixed effect ( $\alpha_i$ ) controls for any time-constant unobserved heterogeneity. Finally,  $\varepsilon_{it}$  is a stochastic error term, indexed  $i$  for the individual and  $t$  for time.

## Empirical results

### *Urban–rural life satisfaction in the UK*

Overall, the respondents in our sample are relatively satisfied with their lives, as the average score is 5.23 and people who

reported to be not (so) satisfied with their life (defined as a four or lower on the seven-point scale) are about 24% of the respondents. The UK seems to follow a similar pattern to other developed Western countries in which urban residents – on average – report lower levels of LS compared to rural residents. In urban areas, the percentage of people who reported to be not so satisfied with their life is 24.5 per cent, against 21.6 per cent in rural areas. There is a difference in terms of the LS of people who did not move and who stayed at the same address (non-migrants) and people who moved within the UK (internal migrants). About 60 per cent of the internal migrants moved from one urban area to another urban area, and <20 per cent of the migrants actually changed their type of environment (from urban to rural or vice versa). Table 1 indicates that urban–rural migrants are more satisfied with their lives compared to rural–urban migrants. On average, rural non-

**Table 1.** Compositional differences of internal migrants and non-migrants.

	Urban–rural migrants	Rural–urban migrants	Urban–urban migrants	Rural–rural migrants	Urban non-migrants	Rural non-migrants
Life satisfaction (average)	5.25	5.11	5.14	5.19	5.22	5.35
Age (average)	42.02	37.23	39.31	42.16	49.67	50.99
Student (%)	4.18	14.86	6.12	4.27	6.23	4.92
Household with children (%)	33.97	26.88	38.22	39.88	25.07	24.83
Single (%)	16.28	35.23	21.96	17.37	18.65	15.71
Unemployment (%)	1.77	3.39	3.75	3.62	2.90	2.60
Retirement (%)	14.68	11.43	10.79	14.53	26.92	27.33
Household income (average)	18.116	15.870	15.571	15.302	13.731	13.884
Non-tertiary education (%)	14.70	14.28	21.03	20.32	32.47	29.88
Poor health (%)	7.38	7.23	9.41	9.45	11.04	8.23
Number of observations	4.687	3.928	27.716	9.641	50.834	28.168
Number of households	678	653	4.359	1.517	11.027	5.769



**Table 2.** Effect of urban residence on life satisfaction (OLS and FE model).

	OLS					
	Model I	Model II	Model III	Model IV	Model V	Model VI
Urban residence	-0.120*** (0.015)	-0.057*** (0.013)	-0.055*** (0.013)	-0.036* (0.22)	-0.046** (0.021)	-0.038* (0.022)
Control variables						
Sex (ref: male)		0.020 (0.013)	0.020 (0.013)			
Age		0.003*** (0.001)	0.003*** (0.001)			
Educational level (ref: high)						
Middle		0.039*** (0.013)	0.032** (0.013)			
Low		0.134*** (0.017)	0.124*** (0.017)			
Children in household						
(ref: no children)						
One child		-0.151*** (0.016)	-0.153*** (0.016)			
Two or more children		-0.178*** (0.017)	-0.183*** (0.017)			
Health (ref: good)						
Poor		-1.110*** (0.022)	-1.110*** (0.022)			
Fair		-0.478*** (0.012)	-0.478*** (0.012)			
Excellent		0.349*** (0.010)	0.348*** (0.010)			
Social contacts						
(ref: on most days)						
Once or twice a week		-0.100*** (0.009)	-0.099*** (0.009)			
Less than once a week		-0.255*** (0.015)	-0.249*** (0.015)			
Marital status (ref: married)						
Living with partner		-0.042** (0.020)	-0.033 (0.020)			
Single		-0.306*** (0.021)	-0.306*** (0.021)			
Separated/divorced		-0.409*** (0.022)	-0.404*** (0.022)			
Widowed		-0.222*** (0.028)	-0.220*** (0.028)			
Job status (ref: employed)						
Unemployed		-0.484*** (0.030)	-0.483*** (0.030)			
Retired		0.261*** (0.022)	0.260*** (0.022)			
Student		0.120*** (0.023)	0.125*** (0.023)			
Family care		-0.066*** (0.023)	-0.075*** (0.024)			
Sick/disabled		-0.529*** (0.036)	-0.539*** (0.036)			

(continued)

Table 2. Continued

	OLS					
	Model I	Model II	Model III	Fixed effects		Model VI
				Model IV	Model V	
Log annual household income		-0.028*** (0.005)	-0.028*** (0.005)		-0.009*** (0.004)	-0.009*** (0.004)
Regional dummies	No	No	Yes	No	No	Yes
Constant	5.307*** (0.012)	5.492*** (0.036)	5.435*** (0.058)	5.251*** (0.014)	6.043*** (0.064)	6.030*** (0.100)
R <sup>2</sup>	0.002	0.171	0.166	0.002	0.047	0.047
Number of observations	124,974	124,974	124,598	124,974	124,974	124,598
Number of households	23,785	23,785	23,769	23,785	23,785	23,769

Notes: Dependent variable: self-reported life satisfaction. Ref: reference category. \*p < 0.1. \*\*p < 0.05. \*\*\*p < 0.01.

movers report the highest LS while the LS of urban non-movers is substantially lower. Urban–rural migrants are on average older, richer and more likely to have children. In contrast, the group of rural–urban migrants contains a higher percentage of students and single, unemployed and lower educated people.

**Baseline estimations**

To examine whether urban–rural differences in SWB might be driven by selective migration, we first present simple ordinary least squares (OLS) regressions of all respondents. We find a considerably lower LS of people living in urban areas compared to people living in rural areas (Table 2, Model I), reporting a -0.12-point lower score on LS. After adding individual control variables (Table 2, Model II), the urban residence coefficient becomes smaller and drops to a -0.06-point lower score, signifying that at least part of the urban–rural differential in LS is driven by a composition effect. The effects of most control variables are in line with earlier research on the determinants of LS since unemployed, widowed or divorced people as well as people with poor health or fewer social contacts are significantly less satisfied with their life.

When we turn to the fixed-effect (FE) estimations, which control for (unobserved) time-invariant characteristics, the negative effect of urban residence reduces to -0.04-point on individual LS (see Table 2, Model IV), which is only significant at the 10% level in the full specification. All in all, our findings suggest that after controlling for many time-variant and time-invariant personal characteristics, the effect of living environment on LS is diminished, which strongly indicates that selection and composition effects may play a role in explaining the urban–rural differences in SWB.<sup>7</sup>

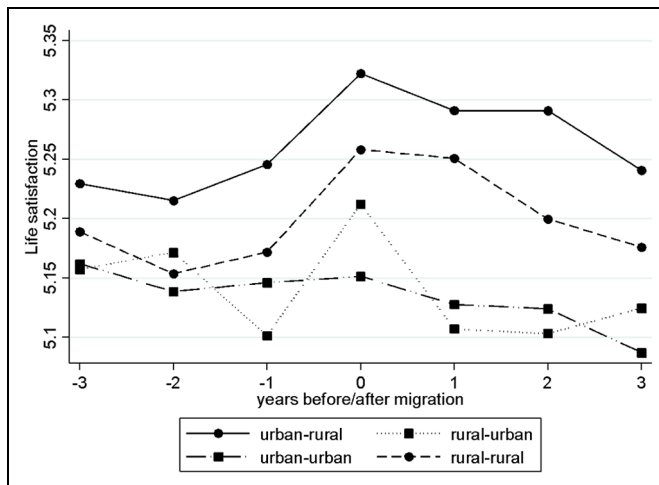
### Alterations in life satisfaction before and after migration

Migration seems to give a positive boost to migrants' LS. All four groups of migrants report a substantial increase in terms of LS between the year prior to the move and the year of the move itself (see Figure 1). This positive boost of migration is, however, temporary as we see a drop in average LS in the years after the move. In line with the research of Nowok et al. (2013), internal migrants seem to adapt to the new situation and return in two or three years to their initial level of LS, signifying a transient effect of the migration event.

However, what is particularly striking is that during this entire period, the average LS of urban-rural migrants is higher compared to the LS of the other three groups. Also, the rural-rural migrants report a relatively high LS compared to the group rural-urban and urban-urban migrants. At the same time, Figure 1 provides limited empirical evidence for the claim that urban areas cause lower levels of LS. Although the drop in the first year after the move turns out to

be stronger for rural-urban migrants compared to urban-rural migrants, there is no lasting effect. Three years after migration, urban-rural migrants are slightly more satisfied with their lives than three years prior to migration, but this effect is too modest to argue that moving to the countryside positively affects individual LS.

Along these lines, Table 3 reports the changes in LS for the four different types of internal migrants, controlling for a large number of individual and household control variables. On average, migration towards rural areas (either from an urban or another rural area) seems to give a positive boost to individual LS, as in the year of migration the coefficients are significantly positive. For migration towards urban areas (either from a rural or another urban area), we find insignificant negative effects in the year of migration. However, no groups of migrants reported any lasting effects. Only in the year of the move do urban-rural migrants report a significantly higher satisfaction with life, signifying that people who are already more satisfied with their life are more likely to choose a rural life, driving urban unhappiness.



**Figure 1.** Alterations in life satisfaction before and after migration.

Note: In this figure we did not take any individual or household controls into account.

**Table 3.** Alterations in life satisfaction before and after migration (FE model).

	Model I: Urban–rural migrants	Model II: Rural–urban migrants	Model III: Urban–urban migrants	Model IV: Rural–rural migrants
No. of years before and after migration				
–3	–0.031 (0.058)	–0.080 (0.078)	–0.100*** (0.032)	–0.128*** (0.048)
–2	–0.016 (0.061)	0.012 (0.065)	–0.081*** (0.029)	–0.131*** (0.044)
–1	–0.044 (0.058)	–0.063 (0.062)	–0.055** (0.026)	–0.077* (0.042)
0	0.098** (0.049)	–0.037 (0.059)	–0.027 (0.022)	0.062* (0.035)
1	0.024 (0.046)	0.024 (0.060)	–0.049** (0.025)	0.023 (0.039)
2	0.078 (0.049)	–0.040 (0.056)	–0.043** (0.022)	0.013 (0.037)
3	–0.010 (0.046)	–0.010 (0.055)	–0.087** (0.022)	–0.015 (0.037)
Individual controls	YES	YES	YES	YES
Constant	5.685*** (0.266)	5.886*** (0.331)	5.874*** (0.040)	5.678*** (0.200)
R <sup>2</sup>	0.139	0.062	0.076	0.112
Number of observations	4.687	3.928	27.716	9.641
Number of households	678	653	4.359	1.517

Notes: Dependent variable: self-reported life satisfaction. \* $p < 0.1$ . \*\* $p < 0.05$ . \*\*\* $p < 0.01$ .

These findings provide further evidence that selective migration at least partly drives the lower levels of urban LS, as urban areas seem to attract migrants with a relatively lower level of LS. Meanwhile, rural areas seem to attract migrants with a relatively higher level of LS. In part, this can be explained by the compositional differences between both groups of migrants. Table 1 already showed that the group of urban–rural migrants is generally richer and contains relatively fewer unemployed people, which is positively associated with SWB. At the same time, it is striking that rural non-movers report the highest LS while the LS of urban non-movers is substantially lower, indicating that there are probably also composition effects not induced by selective (internal) migration.

### Between-group heterogeneity

The previous models all report average associations between (change of) living environment and LS. To gain more insight into the heterogeneity of these associations, we

analyse whether the effect of urban residence on LS varies between groups, utilising fixed-effects estimations using interaction effects. While the baseline model reports a significant negative effect of urban life, we find a significant positive effect for students (see Table 4, Model I). Urban life seems to have a positive influence on students' LS, as the interaction effect between urban residence and being a student reports a positive significant effect of 0.08-point (on a seven-point LS scale). We find a negative significant interaction effect of –0.09-point for the interaction between urban residence, LS and people with non-tertiary education, indicating that city life might be more detrimental for people's LS if one has a non-tertiary education compared to those with a tertiary education. This might indicate that the unskilled or lower skilled profit less from urban advantages. As suggested in the studies of Burger et al. (2020) and Morrison (2021), less-educated residents face higher costs of living in cities relative to income and longer average commutes, negatively affecting SWB. Overall, cities provide high rewards

**Table 4.** Interaction effects between life satisfaction, urban residence and group characteristics (FE model).

	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Urban residence	-0.038* (0.022)	-0.043* (0.022)	-0.049** (0.024)	-0.038* (0.022)	-0.040* (0.024)	-0.035 (0.024)	-0.025 (0.023)
1. Urban × student	0.080* (0.047)						
2. Urban × single		0.029 (0.033)					
3. Urban × unemployed			0.024 (0.055)				
4. Urban × high income				0.001 (0.019)			
5. Urban × family					-0.008 (0.027)		
6. Urban × retired						-0.028 (0.035)	
7. Urban × non-tertiary education							-0.094* (0.050)
Individual and regional controls	YES	YES	YES	YES	YES	YES	YES
Constant	6.030*** (0.100)	5.966*** (0.100)	6.060*** (0.099)	5.989*** (0.100)	6.023*** (0.100)	6.021*** (0.100)	6.019*** (0.101)
R <sup>2</sup>	0.047	0.032	0.055	0.035	0.046	0.036	0.049
Number of observations	124.598	124.598	124.598	124.598	124.598	124.598	124.598
Number of households	23.769	23.769	23.769	23.769	23.769	23.769	23.769

Notes: Dependent variable: self-reported life satisfaction. \*p < 0.1. \*\*p < 0.05. \*\*\*p < 0.01.

for the most able workers and privileged groups but may be a source of disappointment for the less talented or less privileged (Cardoso et al., 2019).

For other sociodemographic characteristics (e.g. marital status, employment status, family status and income), we do not find significant interaction effects. The directions of these interaction effects, however, suggest that a rural to urban move may have a positive effect on the LS of single people as cities can function as a promising marriage market for single people (Costa and Kahn, 2000). In addition, such moves may also be beneficial for people who are unemployed as cities offer plenty of job opportunities (e.g. Glaeser, 2011). Vice versa, an urban to rural move might be positive for families and retired people as the interaction effects are negative for Models V and VI of Table 4. However, more (empirical) research is needed to verify these assumptions and to gain more insights into the actual drivers of the urban–rural SWB differential for specific sociodemographic groups.

## Conclusion and discussion

This study examined the role of selective migration patterns in explaining urban–rural SWB differences in Western countries by analysing urban–rural migration patterns in the UK for the period 1996–2008 based on panel data of the BHPS. In line with earlier research, we found lower levels of LS for urban residence compared to rural residence. After controlling for individual and household characteristics, the effect of place of residence on SWB becomes insignificant, indicating that selection and composition effects may play a role in explaining the urban–rural differences in SWB. Panel data allowed us to follow internal migrants over time and to look at changes in SWB around the move. Analyses showed that people migrating towards rural areas generally

report higher levels of LS compared to people migrating towards urban areas, signifying that people who are already more satisfied with their life are more likely to choose a rural life, driving lower levels of LS in urban areas. However, all groups of migrants did not report any lasting effects and seem to adapt to their initial LS level after a while, which is in line with the adaptation theory (Lucas, 2007; Nowok et al., 2013). In addition, this study provided some preliminary insights into a better understanding of urban–rural differences in SWB for various sociodemographic groups, in that some groups thrive better in a more urban environment while a rural environment is more beneficial for other groups. In line with previous research (e.g. Burger et al., 2020; Carlsen and Leknes, 2019; Morrison and Weckroth, 2018), we found that a move from the countryside to the city is positively associated with the LS of students while it is negatively associated with the LS of people with a non-tertiary education.

## *Limitations and suggestions for future research*

Although using panel data to examine the effect of moving between different types of living environments is a novelty in examining the urban–rural SWB differential, there are several limitations to our research. First, the findings of this specific study cannot be generalised since the UK might be a specific case, as there is a strong sense of ‘rural idyll’ in this country. For future research, it might be interesting to use panel datasets from other countries to repeat this study (see e.g. Burger, 2021) and to improve the external validity of our research findings. Although we cannot disentangle the causal effects behind the urban–rural differential, as a (quasi-)experiment is needed for this, this study provides correlational evidence. Experimental designs are usually impossible

to accomplish and virtually always suffer from low or non-existent external validity, especially due to the very limited geographical and temporal coverage of experimental studies (Pawson and Tilley, 1997).

A second limitation relates to the sample that was researched, since we focused predominantly on (selective) internal migration flows while composition effects are also driven by differences between urban and rural residents who have spent their entire lives at the same location. Especially since urban upbringing is associated with lower SWB (Okulicz-Kozaryn and Valente, 2020), future research may turn attention to specific panels that follow people from childhood. In this regard, Okulicz-Kozaryn and Valente (2020) find that not only current location, but also spending your childhood in cities, predicts lower SWB. Hence, moving does only partly explain lower SWB in cities. Moreover, we could not include international migrants in our sample as we do not know their level of LS prior to migration. Immigrants – who generally report lower levels of LS (Hendriks, 2015) – tend to concentrate in larger cities for various reasons (like job opportunities or proximity to family/relatives) and consequently may be an important driver of lower levels of SWB in urban areas.

A third issue pertains to the measurement of the geographical variable in our study. The official urban and rural classification of the BHPS is used to make a distinction between urban and rural areas, where a respondent is considered to live in an urban area if he or she lives in a place with a population of 10,000 or more inhabitants. However, the category urban settlement is very heterogeneous, including both large cities (e.g. Birmingham and Edinburgh) and smaller towns. Unfortunately, we did not have another option to following this official urban/rural classification. Hence, we were not able to look at the relationship between

place size and SWB (see e.g. Lenzi and Perucca, 2016). In addition, places do not exist in isolation, but are embedded in a wider system of places. In this regard, it would be useful if future research could distinguish, for example, between rural areas in close proximity to cities and more remote rural areas (Lenzi and Perucca, 2020).

Fourth, although our study shows there is potentially a selective migration effect, it does not indicate how important this effect is in explaining the urban–rural differential. In addition, heterogeneity is predominantly examined using objective characteristics, and the role of personality and genetic predispositions and their influence on driving urban–rural SWB differences remains unexamined. For example, do introverted and emotionally stable people thrive in different types of environments than extroverted and neurotic people? Likewise, the moderating effect of lifestyle can be further examined (see e.g. Benson and O'Reilly, 2009).

Despite these limitations, this study provides directions for future research by investigating the role of selective migration in explaining urban–rural differences in SWB. By accounting for between-group heterogeneity, we found that some groups are better able to profit from the SWB advantages of cities than other groups. It would particularly be interesting to test the hypothesis put forward by Morrison (2021) that competition for residence close to urban centres results in a negative relationship between income and commuting distance for the lower-educated as they experience mostly low incomes and long commutes (and less social and leisure time) because of the lack of affordable housing. As a result, the SWB returns of cities are particularly high for rich and well-educated individuals because they profit from the amenities provided in cities, while lower-educated individuals (catering to the other group) seem to profit less (Morrison, 2021).

This study also provides some relevant information on spatial preferences which urban practitioners can use to improve quality of life in both urban and rural areas. For regional and local (spatial) policies, it is increasingly important to understand, and act upon, selective migration patterns. Along these lines, it would be particularly interesting to further examine what matters for whom under what circumstances, and to analyse the underlying reasons for the urban–rural differences in terms of SWB in other countries. In this regard, future research could also examine different aspects of the living environment in more detail (see also Okulicz-Kozaryn and Mazelis, 2018), determining which aspects are important for the SWB of various sociodemographic groups and looking at place–people interactions. Individual SWB is not simply a function of one’s personal attributes but depends on how well people ‘fit in’ to their environment. All else being equal, the closer the personal life-style fit, the higher a person’s SWB. Therefore, future research should take into account the social as well as the ecological influence as defined by Rentflow et al. (2015).

Finally, it is interesting to gain more empirical insights into the reasons and expectations of people choosing an urban or rural life to understand selective migration patterns. Recent research has shown that migrants often have overoptimistic expectations about life after migration, as regards their urban conditions, their urban aspirations or themselves (Cardoso et al., 2019; Knight and Gunatilaka, 2010).

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#### **Notes**

1. The index includes seven domains of deprivation: income; employment; education; health; crime; barriers to housing and services; and living environment.
2. Yet, for a critique of this work, see for example Peck (2016).
3. In 1999 an additional sample of 1500 Scottish households was added to the main sample, and in 2001 a sample of 2000 households in Northern Ireland, making the panel suitable for UK-wide research.
4. For Scotland a slightly different classification is used. The Scottish urban/rural classification defines settlements of 3000 inhabitants or fewer as rural.
5. We applied a random-effect (RE) regression model and compared this model with the fixed-effect (FE) model by a Hausman test. This test rejects the null hypothesis that the difference in the coefficients is not systematic, and therefore we choose a FE model for our analysis. A similar modelling approach was adapted for examining LS effects of residential mobility by Clark (2013) and Nowok et al. (2013).
6. Descriptive statistics of the variables included in the model are available on request.
7. As a sensitivity check, we use an alternative measure of SWB that is more reflective of ill-being. The General Health Questionnaire (GHQ), part of the BHPS, contains 12 questions to identify psychological health. This alternative dependent variable does not yield different results, which justifies the choice of the LS question as an appropriate measure.



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