# The Greener, The Happier?
## The Effects of Urban Green and Abandoned Areas on Residential Well-Being

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**Abstract**

This paper investigates the effects of urban green and abandoned areas on residential well-being in major German cities, using panel data from the German Socio-Economic Panel (SOEP) for the time period between 2000 and 2012 and cross-section data from the European Urban Atlas (EUA) for the year 2006. Using a Geographical Information System (GIS), it calculates the *distance* to urban green and abandoned areas, measured as the Euclidean distance in 100 metres between households and the border of the nearest urban green and abandoned area, respectively, and the *coverage* of urban green and abandoned areas, measured as the hectares covered by urban green and abandoned areas in a pre-defined buffer area of 1,000 metres around households, respectively, as the most important determinants of access to them. It shows that, for the 32 major German cities with more than 100,000 inhabitants, access to urban green areas, such as parks, is significantly positively

associated, whereas access to abandoned areas, such as brownfields, is significantly negatively associated with residential well-being, in particular with life satisfaction, as well as mental and physical health. The effects are strongest for residents who are older, accounting for up to a third of the size of the effect of being unemployed on life satisfaction. Using data from the Berlin Aging Study II (BASE-II) for the time period between 2009 and 2012, this paper also shows that (older) residents who report living closer to greens have been diagnosed significantly less often with certain medical conditions, including diabetes, sleep disorder, and joint disease.

*Keywords:*
Life Satisfaction, Mental Health, Physical Health, Urban Land Use,
Green Areas, Greens, Forests, Waters, Abandoned Areas,
SOEP, BASE-II, EUA, GIS, Spatial Analysis

*JEL:*
C23, Q51, Q57, R20

## 1. Introduction

As urbanisation increasingly puts pressure on open space, efforts to preserve urban green areas have been growing in recent years. Acknowledging that they contribute to their climate and environmental policy objectives, the European Commission promotes their preservation by incorporating them into national and regional policies across the European Union (European Commission, 2013), whereas the Federal Government in Germany promotes their preservation by incorporating them into its national strategy on biodiversity protection (Federal Ministry for the Environment, Nature Conservation, Building, and Nuclear Safety, 2007). A major challenge in efforts to preserve urban green areas is to highlight their benefits for human development. As such, a large number of studies suggest that they have positive effects on residential well-being, in particular on mental health due to a reduction in stress (Kaplan, 1995) and an improvement in mood (Ulrich et al., 1991) and on physical health due to a rise in physical activity (Mitchell and Popham, 2008). Moreover, they have been found to play an important role in protecting biodiversity by providing habitats to hundreds of species (Sukopp and Wittig, 1993; Cornelis and Hermy, 2004; Kuhn et al., 2004), in improving air quality by contributing to climate protection (Nowak, 1994; McPherson, 1998; Nowak et al., 2002) due to their ability to store carbon (Rowntree and Nowak, 1991; McPherson, 1998; Myeong et al., 2006), and in providing recreational and aesthetic benefits (Elsasser, 1999; Tameko et al., 2012). Recently, they have also been found to have positive effects on life satisfaction in general (White et al., 2013; Bertram and Rehdanz, 2014).[1]

So far, however, the literature on the relationship between urban land use and residential well-being is confined to a context outside of Germany, with few exceptions, and has focused almost exclusively on the positive effects of greens, neglecting the potentially positive effects of other types of urban green areas, such as forests and waters, and the potentially negative effects of abandoned areas on residential well-being. This paper fills these gaps. It investigates the effects of urban green and abandoned areas on residential well-being in major German cities, using panel data from the German Socio-Economic Panel (SOEP) for the time period between 2000 and 2012 and cross-section data from the European Urban Atlas (EUA) for the year 2006. Using a Geographical Information System (GIS), it calculates the *distance* to urban green and abandoned areas, measured as the Euclidean distance in 100 metres between households and the border of the nearest

[1] If not stated otherwise, the term *urban green areas* refers to greens, forests, and waters alike, whereas the term *abandoned areas* refers to land without current use in an urban area.

urban green and abandoned area, respectively, and the *coverage* of urban green and abandoned areas, measured as the hectares covered by urban green and abandoned areas in a pre-defined buffer area of 1,000 metres around households, respectively, as the most important determinants of access to them. It shows that, for the 32 major German cities with more than 100,000 inhabitants, access to urban green areas, such as parks, is significantly positively associated, whereas access to abandoned areas, such as brownfields, is significantly negatively associated with residential well-being, in particular with life satisfaction, as well as mental and physical health. The effects are strongest for residents who are older, accounting for up to a third of the size of the effect of being unemployed on life satisfaction. Using data from the Berlin Aging Study II (BASE-II) for the time period between 2009 and 2012, this paper also shows that (older) residents who report living closer to greens have been diagnosed significantly less often with certain medical conditions, including diabetes, sleep disorder, and joint disease. These results are important for policy as they provide guidance on where to adjust the types of urban land use in order to achieve policy objectives such as the reduction of mental and physical health inequalities.

This paper contributes to the literature in three ways. Firstly, it investigates the effects of urban green and abandoned areas on residential well-being for the first time in major German cities, deriving a set of hypotheses which explicitly differentiates the effects of urban green areas from those of abandoned areas. Secondly, it does not only provide effect heterogeneity by differentiating between different types of urban green areas, including greens, forests, and waters, but also provides effect heterogeneity by differentiating between different types of residents. Thirdly, it investigates the transmission mechanisms through which urban green and abandoned areas actually affect residential well-being, with focus on mental and physical health. In doing so, this paper employs a robust empirical model which accounts for unobserved heterogeneity amongst residents and cities to test the derived hypotheses. Finally, it explores whether there is a difference between subjective and objective access to greens and whether residents who report living closer to them have been diagnosed less often with certain medical conditions.

The rest of this paper is organised as follows. Section 2 provides a literature review and derives hypotheses about the effects of urban green and abandoned areas on residential well-being. Section 3 describes the data. Section 4 introduces the empirical model, whereas the obtained results are presented in the fifth section. Section 6 discusses the results. Section 7 concludes.

## 2. Literature Review

The literature on the relationship between urban land use and residential well-being is confined to a context outside of Germany, with few exceptions, and has focused almost exclusively on the positive effects of greens, neglecting the potentially positive effects of other types of urban green areas, such as forests and waters, and the potentially negative effects of abandoned areas on residential well-being. In short, it is subdivided into two subsets of literature which originate from psychology and medicine, respectively. Firstly, the subset of literature which originates from psychology suggests that greens have positive effects on residential well-being by improving mental health, in particular by reducing stress (Grahn and Stigsdotter, 2003; Swanwick et al., 2003; Gidlöf-Gunnarsson and Öhrström, 2007; Nielsen and Hansen, 2007; Stigsdotter et al., 2010) and mental distress (Guite et al., 2006; O'Campo et al., 2009; Annerstedt et al., 2012; Richardson et al., 2013; Sturm and Cohen, 2014), as well as rates of anxiety and depression (de Vries et al., 2003; Maas et al., 2009). Moreover, they have been found to raise positive emotions (Ulrich, 1983, 1984; Ulrich et al., 1991; Knecht, 2004; Bowler et al., 2010; Coon et al., 2011), to restore attention (Kaplan and Kaplan, 1989; Berman et al., 2008), and to have positive effects on self-regulation (Hartig et al., 2003; van den Berg et al., 2007; Karmanov and Hamel, 2008; van den Berg et al., 2010). Secondly, the subset of literature which originates from medicine suggests that greens have positive effects on residential well-being by improving physical health, in particular by raising general health (de Vries et al., 2003; Maas et al., 2006; Agyemang et al., 2007; Potwarka et al., 2008; Richardson et al., 2013) and longevity (Takano et al., 2002), most likely by raising physical activity (Kaczynski and Henderson, 2007; Maas et al., 2008; Hillsdon et al., 2011), which decreases with distance to greens (Hillsdon et al., 2011).[2] Finally, they have been found to improve social well-being (Madanipour, 1996; Carmona et al., 2003; Worpole and Knox, 2007; Leslie and Cerin, 2008), most likely by raising social interaction (Kuo et al., 1998), as well as social cohesion and identity (Newton, 2007). Interestingly, perceived access to greens appears to be sufficient for them to have positive effects on residential well-being (Kaplan, 2001; Evans, 2003; Wells and Evans, 2003; Gidlöf-Gunnarsson and Öhrström, 2007). Moreover, even short-term exposure to them seems to be sufficient to improve cognitive functioning and mood (Ulrich et al., 1991; Hull, 1992; Marcus and Barnes, 1999; Kaplan, 2001; Hartig et al.,

[2]Intuitively, there might be endogeneity between the positive effects of greens on mental and the positive effects of greens on physical health (McDonald and Hodgdon, 1991; Steinberg et al., 1997; Padgett and Glaser, 2003; Arranz et al., 2007; Webster and Glaser, 2008).

2003; Berman et al., 2008; Abkar et al., 2010; Nisbet and Zelenski, 2011).[3]

Recently, a new stream of literature suggests that greens have positive effects on life satisfaction in general (Smyth et al., 2008; Ambrey and Fleming, 2012; White et al., 2013; Alcock et al., 2014; Bertram and Rehdanz, 2014).[4] Specifically, the studies which are most closely related to this paper are White et al. (2013) and Bertram and Rehdanz (2014). Using panel data from the British Household Panel Study (BHPS) for the time period between 1991 and 2008 and cross-section data from the General Land Use Database (GLUD) for the year 2005, White et al. (2013) find that greens do not only have positive effects on the mental health of residents in England, but also on their life satisfaction. Using cross-section data from a web survey in the year 2012 and cross-section data from the European Urban Atlas (EUA) for the year 2006, Bertram and Rehdanz (2014) find that greens have positive effects on the life satisfaction of residents in Berlin. This stream of literature is incomplete for two reasons. Firstly, it is confined to a context outside of Germany and does not calculate distances and coverages, using geo-referenced data on households and urban land use, with the exception of Bertram and Rehdanz (2014). However, Bertram and Rehdanz (2014) investigate the effects of greens on residential well-being in Berlin only. Arguably, Berlin might be a special case in the sense that it has a higher share of greens when compared to other major German cities.[5] Moreover, Bertram and Rehdanz (2014), leaving aside issues which are typically associated with web surveys, have only a small sample size and imprecise measures of the geographical locations of the places of residence of individuals. Secondly, it focuses almost exclusively on the positive effects of greens, neglecting the potentially positive effects of other types of urban green areas, such as forests and waters, and the potentially negative effects of abandoned areas on residential well-being. However, there is empirical evidence that greens which are perceived as unmanaged have negative effects on residential well-being due to fear of crime (Bixler and Floyd, 1997; Kuo et al., 1998). Arguably, similar effects might be found for abandoned areas.

[3]Intuitively, greens provide a number of public goods, all of which have positive effects on residential well-being by improving either mental or physical health, or both. Amongst others, they include the provision of room for recreation, relaxation, and outdoor activities; the provision of cultural services, such as experiencing and learning about nature; the provision of environmental regulation, such as storm water retention and climate regulation; the mediation of adverse environmental impacts, such as street noise and air pollution; and the provision of aesthetic benefits, such as the view onto greens themselves (Tzoulas et al., 2007).

[4]Alcock et al. (2014) are a spin-off of White et al. (2013), focusing on residents who move.

[5]Berlin is ranked 6 out of the 32 major German cities in the final sample in terms of coverage of greens (European Environment Agency, 2011; Federal Statistical Office, 2014).

This paper fills these gaps. It investigates the effects of urban green and abandoned areas on residential well-being in major German cities. Assume that $U_i(G, A)$ is a concave utility function, where $G$ is the presence of urban green areas and $A$ is the presence of abandoned areas in the surroundings of all residents $i$. Against the background of the literature, two hypotheses can be derived:

H.1 On average, the presence of urban green and abandoned areas has non-zero effects on residential well-being for residents who live in their surroundings. That is, $\partial U_i/\partial G \neq 0$ and $\partial U_i/\partial A \neq 0$.

- H.1.1 Specifically, the presence of urban green areas has positive effects on residential well-being for residents who live in their surroundings. That is, $\partial U_i/\partial G > 0$.
- H.1.2 Specifically, the presence of abandoned areas has negative effects on residential well-being for residents who live in their surroundings. That is, $\partial U_i/\partial A < 0$.

H.2 On average, the presence of urban green and abandoned areas has non-linear effects on residential well-being for residents who live in their surroundings. Specifically, the positive effects of urban green areas and the negative effects of abandoned areas are increasing in the respective area at a decreasing rate. That is, $\partial^2 U_i/\partial G^2 < 0$ and $\partial^2 U_i/\partial A^2 > 0$.

We also conjecture that the effects of urban green and abandoned areas on residential well-being are different for different types of residents. Specifically, we conjecture that the positive effects of urban green areas are stronger for residents who are female (Jorgensen et al., 2002), who are older (Jorgensen and Anthopoulou, 2007), who live in low-income households, and who have a child in the household (Ambrey and Fleming, 2012). Conversely, we conjecture that the negative effects of abandoned areas are stronger for the same types of residents.

## 3. Data

### *3.1. Data on Residential Well-Being*

We use panel data from the German Socio-Economic Panel (SOEP) for the time period between 2000 and 2012. The SOEP is a comprehensive and representative panel study of private households in Germany, including almost 11,000 households and 22,000 individuals every year. It provides information on all household members,

covering Germans living in the old and new federal states, foreigners, and recent immigrants (Wagner et al., 2007, 2008). Most importantly, it provides information on the geographical locations of the places of residence of individuals, allowing to merge data on residential well-being with data on urban green and abandoned areas through geographical coordinates.[6] As such, the SOEP is not only representative of individuals living in Germany today, but also provides the necessary geographical reference points for our analysis.[7]

To investigate the effects of urban green and abandoned areas on residential well-being, we select a set of dependent variables which covers three important areas of individual well-being, including life satisfaction, as well as mental and physical health. Firstly, we select *satisfaction with life* as an indicator of life satisfaction in general. The indicator is obtained from an eleven-point single-item Likert scale which asks "How satisfied are you with your life, all things considered?".[8] Secondly, we select the mental health summary scale, *mental health* in general, *role-emotional functioning*, *social functioning*, and *vitality* as indicators of mental health. Thirdly, we select the physical health summary scale, *bodily pain*, *role-physical functioning*, and *physical functioning* as indicators of physical health. The indicators of mental and physical health originate from the Short-Form (SF12v2) Health Survey, which has been incorporated into the SOEP in the years 2002, 2004, 2006, 2008, 2010, and 2012 (Nübling et al., 2007).[9] The SF12v2 is a multi-purpose questionnaire on health-related quality of life. It provides generic as opposed to specific indicators and

[6]The SOEP provides the geographical coordinates of the places of residence of individuals at the street-block level, which is more accurate in an urban when compared to a rural area.

[7]The SOEP is subject to rigorous data protection regulation. It is never possible to derive the household data from the coordinates since they are never visible to the researcher at the same time. See Göbel and Pauer (2014) for more information.

[8]Conceptually, life satisfaction is equivalent to subjective well-being (Welsch and Kühling, 2009) or experienced utility (Kahnemann et al., 1997), being defined as the cognitive evaluation of the circumstances of life (Diener et al., 1999).

[9]Conceptually, the indicators of mental and physical health capture different dimensions of mental and physical health, respectively. For mental health, *mental health* in general and *vitality* are defined as the absence of mental disorder and mental fatigue, respectively, whereas *role-emotional functioning* and *social functioning* are defined as the extent to which individuals are capable of mastering work or other daily activities and social activities without being affected by emotional problems, respectively. For physical health, *bodily pain* is defined as the presence of physical pain, whereas *role-physical functioning* and *physical functioning* are defined as the extent to which individuals are capable of mastering work or other daily activities and physical activities without being affected by physical pain, respectively. The mental and physical health summary scales allow differentiating the relative strengths of the respective indicators.

does not target a particular age, treatment group, or life event (Ware et al., 1995). As such, it is useful in screening individuals, comparing general and particular treatment groups, and comparing the relative burden of life events. Thereby, *mental health* in general, *role-emotional functioning*, *social functioning*, and *vitality* as indicators of mental health and bodily pain, *role-physical functioning*, and *physical functioning* as indicators of physical health are obtained from equally weighted five-point multi-item Likert scales, all of which are highly correlated with *satisfaction with life*, whereas the mental and physical health summary scales are obtained from combining the respective indicators with equal weights.[10] Finally, we select the body-mass index as an additional indicator of physical health. Using life satisfaction serves as a proxy for residential well-being, while using the indicators of mental and physical health serves to identify and rank the transmission mechanisms through which urban green and abandoned areas actually affect residential well-being.

*3.2. Data on Urban Green and Abandoned Areas*

We use cross-section data from the European Urban Atlas (EUA) for the year 2006. The EUA is a comprehensive and comparative cross-section study of urban land use in Europe, including data on urban land use for 35 of 76 major German cities (European Environment Agency, 2011).[11] It provides information on different types of urban land use, covering different types of urban green areas, including greens, forests, and waters, and abandoned areas. Most importantly, it provides information on the geographical locations of urban green and abandoned areas, allowing again to merge data on urban green and abandoned areas with data on residential well-being through geographical coordinates.[12]

The definitions of urban green and abandoned areas are given in Table A.1.

Table A.1 about here

[10]The indicators of mental and physical health are normalised between 0 and 100. Moreover norm-based scoring, involving a t-score transformation with mean 50 and standard deviation 10, has been applied to make their interpretation easier.

[11]We restrict the data to the 31 major German cities with greater or equal to 100,000 inhabitants to avoid confounding the effects of urban green and abandoned areas on residential well-being with those of urbanisation. The 31 major German cities with greater or equal 100,000 inhabitants are *Augsburg*, *Berlin*, *Bielefeld*, *Bonn*, *Bremen*, *Darmstadt*, *Dresden*, *Düsseldorf*, *Erfurt*, *Essen*, *Frankfurt am Main*, *Freiburg im Breisgau*, *Göttingen*, *Halle an der Saale*, *Hamburg*, *Hannover*, *Karlsruhe*, *Kiel*, *Koblenz*, *Köln*, *Leipzig*, *Magdeburg*, *Mainz*, *Mönchengladbach*, *München*, *Nürnberg*, *Saarbrücken*, *Stuttgart*, *Trier*, *Wiesbaden*, and *Wuppertal*. Although it has only 92,000 inhabitants, we also include the city of *Schwerin* to increase the size of the final sample.

[12]The EUA provides exact geographical coordinates of urban green and abandoned areas.

To investigate the effects of urban green and abandoned areas on residential well-being, we define a set of independent variables which includes the two most important determinants of access to them. Firstly, we define the *distance* to urban green and abandoned areas, measured as the Euclidean distance in 100 metres between households and the border of the nearest urban green and abandoned area, respectively. Secondly, we define the *coverage* of urban green and abandoned areas, measured as the hectares covered by urban green and abandoned areas in a pre-defined buffer area of 1,000 metres around households, respectively. Using both distances and coverages serves as a robustness check, given that distances do not make any assumptions, contrary to coverages.

*3.3. Merge*

We merge the data on residential well-being with the data on urban green and abandoned areas in two steps. Firstly, we convert the geographical coordinates of the places of residence of individuals in the SOEP and the geographical coordinates of the urban green and abandoned areas in the EUA into a common coordinate system. Secondly, we merge the data on residential well-being with the data on urban green and abandoned areas, having calculated both distances and coverages, using a Geographical Information System (GIS).[13] Finally, we add controls at the micro level, originating from the SOEP, at the macro level, originating from the Federal Statistical Office, and at the geo level, originating from our own calculations, all of which have been shown to affect the dependent variables in the literature.[14] The controls at the micro level include demographic characteristics, human capital characteristics, and economic conditions at the individual level, as well as household characteristics and housing conditions at the household level. The controls at the macro level include macroeconomic conditions and neighbourhood characteristics at the county level. The controls at the geo level include the distance to the city centre and the distance to the city periphery at the municipal level.[15]

The descriptive statistics of the final sample are given in Table A.2.

Table A.2 about here

[13]Intuitively, this introduces measurement error as the data on urban green and abandoned areas are cross-section data and the data on residential well-being are panel data, implying that single-year observations of urban green and abandoned areas are assigned to multiple-year observations of residential well-being. However, the bias resulting from this measurement error is minor in practice as the presence of urban green and abandoned areas is rather persistent over time.

[14]See Frey (2010) for a review of the relevant controls.

[15]The city centre is defined as the geographical location of the town hall.

## 4. Empirical Model

We employ a linear regression model estimated by generalised least squares (GLS) with fixed effects and robust standard errors which are clustered at the city level to investigate the effects of urban green and abandoned areas on residential well-being. Typically, the estimation of the effects of urban green and abandoned areas on residential well-being is prone to the problem of endogeneity, which leads to biased and inconsistent parameter estimates.

The problem of endogeneity arises whenever there are individual characteristics which are not observable and therewith not includable in the regression equation although they affect the regressand. As such, the problem of endogeneity leads to biased and inconsistent parameter estimates as the regressors are correlated with the error terms. For example, in the given context, there might be two types of endogeneity, both of which resulting from the self-selection of residents into particular urban areas, commonly referred to as *endogenous residential sorting*, and leading to reverse causality. Firstly, residents who have higher preferences for particular types of urban land use might have already moved to particular urban areas with lower distance to or higher coverage of them, et vice versa, which has made them better off, prior to the observation period. We can account for this type of endogeneity, commonly referred to as *unobserved heterogeneity*, given that the data on residential well-being are panel data, including more than one observation for each individual over time. As such, we can account for unobserved heterogeneity of residents by including individual fixed effects. Moreover, we can account for unobserved heterogeneity of cities by including city fixed effects. However, this comes at the cost that discrete models, which assume ordinality, are not easily applicable to panel data, so that continuous linear models, which assume cardinality, are preferred in practice. In fact, this introduces measurement error as *satisfaction with life* and the other dependent variables are discrete dependent variables, which are censored from above and below. However, the bias resulting from this measurement error has been found to be minor in practice (see, for example, Ferrer-i Carbonell and Frijters (2004) for panel data and Brereton et al. (2008) and Ferreira and Moro (2010) for repeated cross-section data). Secondly, residents who have higher preferences for particular types of urban land use might still move to particular urban areas with lower distance to or higher coverage of them, et vice versa, which makes them better off, during the observation period. Unfortunately, we cannot account for this type of endogeneity, commonly referred to as *simultaneity*, given that the data on urban green and abandoned areas are cross-section data, including only one observation for each urban green and abandoned area over time. In fact, as estimation requires variation, we rely on residents who move from one urban area to another in order to

provide variation in and therewith identify the effects of urban green and abandoned areas on residential well-being.[16] However, the bias resulting from simultaneity has been found to be minor in practice (Chay and Greenstone, 2005). Moreover, we obtain results jointly for all residents, as well as separately for residents who move and residents who do not move as a robustness check.

We test whether fixed or random effects are present, using the simple specification test by Wu (1973) and Hausman (1978), which tests whether the differences in parameter estimates between two auxiliary regressions that are estimated by fixed effects and random effects, respectively, are significant. We confirm the presence of fixed effects, using not only this simple specification test, but also the robust version of this test by Wooldridge (2002), which does not assume that random effects are fully efficient and which works better with robust standard errors.[17]

We employ the following regression equation:

$$\begin{aligned} y_{it} = \beta_0 + \mathbf{MIC'_{it}}\boldsymbol{\beta}_1 + \mathbf{MAC'_{it}}\boldsymbol{\beta}_2 + \mathbf{GEO'_{it}}\boldsymbol{\beta}_3 + \\ + \delta_1 measure_{it} + \delta_2 measure_{it}^2 + \eta_c + \mu_i + \epsilon_{it} \end{aligned}$$

where $y$ is *satisfaction with life* or any other dependent variable as the regressand; $\beta_0$ is the constant; $\beta_1 - \beta_3$ and $\delta_1 - \delta_2$ are the coefficients; *MIC*, *MAC*, and *GEO* are the vectors of controls at the micro level, macro level, and geo level, respectively; $\eta_c$ and $\mu_i$ are time-invariant unobserved heterogeneity or fixed effects at the city level and individual level, respectively; $\epsilon_{it}$ is the idiosyncratic disturbance of resident $i$ in time period $t$; and *measure* is either the *distance* to or the *coverage* of urban green and abandoned areas, respectively, as the regressor of interest.

[16] Notably, even if the data on urban green and abandoned areas were panel data, it would be difficult to account for simultaneity as this would require *exogenous variation* in urban green and abandoned areas. However, it is difficult to think of any exogenous variation which directly affects the presence of urban green and abandoned areas without indirectly affecting residential well-being. To our knowledge, there exists no exogenous variation, like the passage of a law, which is binding in the sense that it actually affects the presence of urban green and abandoned areas without being comprehensive in the sense that it also affects residential well-being in various other ways.

[17] We reject the null hypothesis that the differences in parameter estimates between two auxiliary regressions which are estimated by fixed effects and random effects, respectively, are not systematic at the 1% level, using the simple specification test by Wu (1973) and Hausman (1978) and the robust version of this test by Wooldridge (2002). In fact, the empirical values 720.32 and 894.27 exceed by far the critical value 56.06 of the $\chi^2$-distribution with 34 degrees of freedom. As such, the regressors are correlated with the error terms. Thus, the estimation with fixed effects is strictly preferable to the estimation with random effects.

## 5. Results

The effects of the distances to and the coverages of urban green and abandoned areas on life satisfaction can be seen in Tables B.1 and B.2, respectively. In Tables B.1 and B.2, the first two columns are estimated by pooled ordinary-least-squares (OLS) estimators, whereas the last two columns are estimated by fixed-effects (FE) estimators, with and without controls, respectively. Thereby, comparing the first with the second column and the third with the fourth column gives insight into the importance of controlling for observables, whereas comparing the first with the third column and the second with the fourth column gives insight into the importance of controlling for unobservables. As can be seen, controlling for both observables and unobservables is important for the estimation of the effects of the distances to and the coverages of greens. Therefore, the fixed-effects model with controls is taken as the baseline specification.[18]

Tables B.1 and B.2 about here

As can be seen in Table B.1, the distance to greens has a significantly negative effect on life satisfaction at the 1% level, whereas the distance to abandoned areas has a significantly positive effect on it at the same level. Moreover, both effects are non-linear. That is, increasing the distance to greens significantly decreases life satisfaction, whereas increasing the distance to abandoned areas significantly increases it, at a decreasing rate, respectively. However, both effects are small. That is, increasing the distance to greens by 100 metres, given a mean distance to greens of 279 metres, decreases life satisfaction only by 1% of a standard deviation, whereas increasing the distance to abandoned areas by 100 metres, given a mean distance to abandoned areas of 961 metres, increases it only by 2% of a standard deviation, compared to a 29% drop in life satisfaction when becoming unemployed. As can be seen in Table B.2, the same pictures arises when looking at the effects of the coverages of greens and abandoned areas on life satisfaction. However, the sizes of

[18] As has been reported elsewhere, having very good health has a significantly positive effect on life satisfaction at the 1% level, whereas being older, having very bad health, and being disabled has a significantly negative effect at the 5% and 1% level, respectively. Moreover, being on parental leave has a significantly positive effect on life satisfaction at the 1% level, whereas individual income and household income has a significantly positive effect at the 5% and 1% level, respectively. Finally, being unemployed and the unemployment rate are most detrimental to life satisfaction and amongst the largest regression coefficients (Clark and Oswald, 2004; Blanchflower, 2008).

these effects are slightly different. That is, increasing the coverage of greens by one hectare, given a mean coverage of greens of 23 hectares, increases life satisfaction by 0.4% of a standard deviation, whereas increasing the coverage of abandoned areas by one hectare, given a mean coverage of abandoned areas of 1 hectare, decreases it by 2% of a standard deviation. To sum up, the presence of urban green and abandoned areas has, on average, non-zero effects on residential well-being for residents who live in their surroundings. In fact, greens matter for life satisfaction, but abandoned areas matter more, whereas forests and waters do not matter much. This largely confirms Hypothesis H.1. Moreover, the presence of urban green areas has positive effects on residential well-being for residents who live in their surroundings, whereas the presence of abandoned areas has negative effects on it. In fact, greens raise life satisfaction, whereas abandoned areas reduce it. This confirms Hypotheses H.1.1 and H.1.2. Finally, the presence of urban green and abandoned areas has, on average, non-linear effects on residential well-being for residents who live in their surroundings. Specifically, the positive effects of urban green areas and the negative effects of abandoned areas are increasing at a decreasing rate in the respective area. In fact, greens raise life satisfaction, whereas abandoned areas reduce it, at a decreasing rate, respectively, which is in line with the notion of diminishing marginal returns to utility or disutility in neoclassical utility theory.[19] This confirms Hypothesis H.2.

Up to now, the effects of the distances to and the coverages of urban green and abandoned areas on life satisfaction were estimated jointly for all residents. In Tables B.3 and B.4, they are estimated separately for residents who move, using fixed-effects (FE) estimators, and residents who do not move, using pooled ordinary-least-squares (OLS) estimators.[20] Thereby, comparing residents who move with residents who do not move gives insight into the significance of bias resulting from simultaneity. In Tables B.5 and B.6, they are estimated separately for different types of residents, including residents who are female, who are older, who live in low-income households, and who have a child in the household, using the baseline specification. Thereby, comparing different types of residents gives insight into the relative significance of the effects of the distances to and the coverages of urban green and abandoned areas on life satisfaction for different population groups.

Tables B.3 and B.4 about here

[19]However, the effects of the squared distance to greens and the squared coverage of abandoned areas are significant at the 10% level only in the baseline specification.

[20]Unfortunately, we have to resort to pooled ordinary-least-squares (OLS) estimators as there is no variation in urban green and abandoned areas over time.

As can be seen in Tables B.3 and B.4, the effects of the distances to greens and abandoned areas and the effect of the coverage of abandoned areas on life satisfaction are almost identical to the effects identified in the baseline specification, regardless of whether they are estimated for residents who move or residents who do not move, with the exception of the effect of the coverage of greens, which becomes insignificant when estimated for residents who do not move.[21] To sum up, it seems that, although we cannot claim that the effects identified in the baseline specification are causal, bias resulting from simultaneity plays a minor role.

Tables B.5 and B.6 about here

As can be seen in Tables B.5 and B.6, the effects of the distances to and the coverages of greens and abandoned areas on life satisfaction are stronger for residents who are older, whereas the effects of abandoned areas are stronger for residents who live in high-income households and residents who do not have a child in the household. Moreover, there is some evidence that the effects are stronger for residents who are male. To sum up, it seems that, although the evidence is partly different from what we expected, the significance of the effects is different for different population groups. In fact, it seems that small effects for average residents translate into substantial effects for older residents, being up to five times more sizeable. Specifically, increasing the distance to greens by 100 metres, given a mean distance to greens of 277 metres, decreases life satisfaction for residents who are older by 10% of a standard deviation, whereas increasing the distance to abandoned areas by 100 metres, given a mean distance to abandoned areas of 967 metres, increases it by 4% of a standard deviation, compared to a 28% drop in life satisfaction when becoming unemployed. As such, the sizes of the effects for older residents can account for up to a third of the size of the effect of becoming unemployed.

How do urban green and abandoned areas actually affect residential well-being? To answer this question, we replace the indicator of life satisfaction as a proxy for residential well-being with indicators of mental and physical health to identify and rank potential transmission mechanisms. Tables B.7 and B.8 use indicators of mental health, whereas Tables B.9 and B.10 use indicators of physical health.

Tables B.7, B.8, B.9, and B.10 about here

[21] Notably, the effects identified in the baseline specification remain unchanged when controlling for residents who move by including a dummy variable.

As can be seen in Tables B.7 and B.8, the distance to abandoned areas has a significantly positive effect on *social functioning* at the 1% level, whereas the coverage of abandoned areas has a significantly negative effect on almost all indicators at the 1% and 5% level, respectively, with the effect on *social functioning* being the strongest. Contrarily, the coverage of greens has a significantly positive effect on *social functioning* at the 5% level. As can be seen in Tables B.9 and B.10, the distance to abandoned areas has a significantly positive effect on *physical functioning* at the 1% level, whereas the coverage of abandoned areas has a significantly negative effect on it at the 5% level, while decreasing the body-mass index, which is unexpected. Contrarily, the distance to greens has a significantly negative effect on the body-mass index at the 1% level, thus increasing the body-mass index, whereas the coverage of greens has a significantly positive effect on *bodily pain* at the 5% level, thus decreasing bodily pain. To sum up, it seems that greens and abandoned areas affect residential well-being by affecting both mental and physical health. Specifically, it seems that greens raise *social functioning*, whereas abandoned areas reduce it, being detrimental to mental health in various other ways as well. Moreover, it seems that greens reduce bodily pain, whereas abandoned areas reduce physical functioning.

Using data from the Berlin Aging Study II (BASE-II) for the time period between 2009 and 2012, we explore whether there is a difference between subjective and objective access to greens and whether residents who report living closer to them have been diagnosed less often with certain medical conditions. The BASE-II is a comprehensive study of private households in Berlin (Bertram et al., 2014).[22] However, it is not representative of the entire population in Berlin as it includes mostly residents who are older (aged 60 or older). As a control group, residents aged 20 to 35 are also included. Nevertheless, the BASE-II is interesting for two reasons. Firstly, it includes an indicator of subjective access to greens. Up to now, we used objective indicators. It is interesting to explore whether there is a difference between subjective and objective access to greens. Moreover, this serves as a robustness check as subjective indicators say something about perceived quality, whereas objective indicators do not.[23] Secondly, it includes indicators of medical conditions. Up to now, we used abstract mental and physical health indicators. It is interesting to explore whether these indicators translate into concrete medical conditions.

[22]The BASE-II includes a survey module which uses a questionnaire that is almost identical to the questionnaire used in the SOEP (Wagner et al., 2007, 2008). It is supported by the Federal Ministry of Education and Research (Bundesministerium für Bildung und Forschung, BMBF) under grants #16SV5536K, #16SV5538, and #16SV5837 (previously grant #01UW0808).

[23]The EUA does not provide information on quality of urban green and abandoned areas.

Tables B.11 and B.12 show the effects of subjective access to greens on life satisfaction and the likelihood to have been diagnosed with certain medical conditions, respectively, using the same model specifications and variable definitions as in the baseline specification.[24]

Tables B.11 and B.12 about here

As can be seen in Table B.11, subjective access to greens has a significantly positive effect on life satisfaction at the 1% level for the categories *Access to Greens Below 10 Minutes* and *Access to Greens Between 10 to 20 Minutes* and at the 5% level for the category *Access to Greens Above 20 Minutes*, relative to the base category *Unreachable*. Moreover, the effects become more sizeable the better the access. As such, residents who report living closer to greens also report a higher life satisfaction.[25] As can be seen in Table B.12, subjective access to greens has a significantly negative effect on the likelihood to have been diagnosed with diabetes and sleep disorder at the 1% level and joint disease at the 5% level for the category *Access to Greens Below 10 Minutes*, relative to the base category *Unreachable*.[26] Again, the effects become more sizeable the better the access, with the exception of cardiac disease, which goes into the opposite direction. In fact, residents who report living in the category *Access to Greens Below 10 Minutes* are 14, 11, and 15 percentage points less likely to have been diagnosed with diabetes, sleep disorder, and joint disease, respectively.[27] To sum up, it seems that there is no difference between subjective and objective access to greens and that the abstract mental and physical health indicators do translate into concrete medical conditions, at least for residents who are older.

[24]Unfortunately, we have to resort to pooled ordinary-least-squares (OLS) estimators as there is insufficient variation in subjective access to greens over time. Moreover, we have to resort to robust standard errors which are clustered at the household level as there is only one city.

[25]The indicator of subjective access to greens is obtained from a four-point single-item Likert scale which asks "How long does it take you to walk to greens in your area?" with answer options *Below 10 Minutes*, *Between 10 to 20 Minutes*, *Above 20 Minutes*, and *Unreachable*.

[26]The indicators of medical conditions are obtained from a binary item which asks "Has a doctor ever diagnosed you with one or more of the following medical conditions?" with answer options *Hypertension*, *Cardiac Disease*, *Stroke*, *Diabetes*, *Cancer*, *Joint Disease*, *Back Complaint*, *Sleep Disorder*, and many more.

[27]Notably, the effects remain unchanged when using the marginal effects of binary probit or logit regression models instead of using linear regression models.

It is possible to quantify the effects of the distances to and the coverages of urban green and abandoned areas on life satisfaction monetarily, using the life satisfaction approach. Compared to both stated and revealed preference approaches, the life satisfaction approach has a number of advantages when quantifying the effects of public goods monetarily. Compared to stated preference approaches, it avoids bias resulting from the complexity of or attitudes towards the public good to be valued, which leads to superficial or symbolic valuation. Rather than asking individuals to value a complex public good in a hypothetical situation, the life satisfaction approach does not rely on the ability of individuals to consider all relevant consequences of a change in the provision of the public good, reducing the cognitive burden which is typically associated with stated preference approaches. Moreover, it does not reveal to individuals the relationship between life satisfaction and the public good to be valued, reducing the incentive to answer in a strategical or socially desirable way. Contrary to revealed preference approaches, it avoids bias resulting from the assumption that the market for the private good taken to be the complement of the public good to be valued is in equilibrium, which is violated in the presence of low variety of private goods. Rather than assuming that the provision of the public good to be valued is reflected in market transitions, the life satisfaction approach requires only that life satisfaction constitutes a valid approximation of welfare. Finally, it avoids bias resulting from misprediction of utility (Frey and Stutzer, 2013).

We can calculate the marginal willingness-to-pay (MWTP) of residents in order to decrease the distance to and increase the coverage of greens, as well as increase the distance to and decrease the coverage of abandoned areas, in their surroundings, using the following formula:[28]

$$MWTP = \left. \frac{\frac{\partial y}{\partial measure}}{\frac{\partial y}{\partial income_h} + \frac{\partial y}{\partial income_i}} \right|_{\partial y = 0} = \frac{\bar{X}_{income_h} \bar{X}_{income_i} (\hat{\beta}_{measure} + 2\hat{\beta}_{measure^2} \bar{X}_{measure})}{\hat{\beta}_{income_h} \bar{X}_{income_i} + \hat{\beta}_{income_i} \bar{X}_{income_h}}$$

where $y$ is *satisfaction with life* as the regressand; $\bar{X}$ is the respective mean; $\hat{\beta}$ is the respective regression coefficient; *measure* is either the *distance* to or the *coverage* of greens and abandoned areas, respectively; and $income_h$ and $income_i$ is the monthly net household income and individual income, respectively.

[28]Notably, we include both household and individual income in the formula as we include both of them in the baseline specification. Both household and individual income approximate the value individuals assign to income. As such, omitting one of them leads to bias and inconsistency.

We find that, ceteris paribus, residents are, on average, willing to pay 23 Euro of monthly net individual income in order to increase the coverage of greens in a pre-defined buffer area of 1,000 metres around households by one hectare, given a mean coverage of greens of 23 hectares, whereas they are, on average, willing to pay 442 Euro to decrease the coverage of abandoned areas by one hectare, given a mean coverage of abandoned areas of one hectare. Moreover, we find that, ceteris paribus, residents are, on average, willing to pay 455 Euro of monthly net individual income in order to decrease the distance between households and greens by 100 metres, given a mean distance to greens of 279 metres, whereas they are, on average, willing to pay 96 Euro to increase the distance between households and abandoned areas by 100 metres, given a mean distance to abandoned areas of 961 metres.[29]

We can also calculate the optimal values of the distances to and the coverages of greens and abandoned areas, using the following formula:[30]

$$X^*_{measure} = -\frac{\hat{\beta}_{measure}}{2\hat{\beta}_{measure^2}}$$

where $X^*$ is the respective optimal value; $\hat{\beta}$ is the respective regression coefficient; and *measure* is either the *distance* to or the *coverage* of greens and abandoned areas, respectively.

We find that, ceteris paribus, the optimal value of the coverage of greens in a pre-defined buffer area of 1,000 metres around households is, on average, 33 hectares, whereas the optimal value of the coverage of abandoned areas is, on average, zero hectares. Moreover, we find that, ceteris paribus, the optimal value of the distance between households and greens is, on average, zero metres, whereas it is, on average, 1,439 metres for abandoned areas.[31]

Figures B.1, B.2, B.3, and B.4 about here

[29]To provide more conservative calculations, we assume that the effects of the squared coverage of abandoned areas and the squared distance to greens on life satisfaction, which are significant at the 10% level only in the baseline specification, are insignificant.

[30]Notably, the values are optimal in the sense that they maximise life satisfaction.

[31]The optimal values of zero for the coverage of abandoned areas and the distance to greens derive from the assumption that the effects of the squared coverage of abandoned areas and the squared distance to greens on life satisfaction are insignificant.

The intuition behind the optimal values of zero hectares and metres, respectively, for the coverage of abandoned areas and for the distance to greens is straightforward: the life satisfaction of residents is maximised, everything else held constant, whenever there are no abandoned areas in their immediate surroundings and whenever they live closest to the nearest green.

## 6. Discussion

Our results confirm the results of similar studies. White et al. (2013) show that greens do not only have positive effects on the mental health of residents in England, but also on their life satisfaction. Bertram and Rehdanz (2014) find that greens have positive effects on the life satisfaction of residents in Berlin. However, besides the fact that neither study investigates the effects of abandoned areas on residential well-being, there are important differences between those studies and ours.

White et al. (2013), using panel data from the British Household Panel Study (BHPS), adopt a similar approach in terms of the empirical model, especially when it comes to using fixed-effects (FE) estimators, but, using cross-section data from the General Land Use Database (GLUD), adopt a different approach in terms of the data on urban land use. In fact, their data are based on aggregated areas, which are, in turn, based on population densities. As a result, these areas differ from each other in size and shape, implying that more densely populated areas are smaller than less densely populated ones, et vice versa. On the contrary, our data are based on pre-defined buffer areas, which are, in turn, based on pre-defined radii. As a result, these areas are equal to each other in size and shape. Moreover, they are free from methodological issues which naturally arise when aggregating geographical information. This is a strong advantage, especially when considering the geographical location and mobility of households.[32] Nevertheless, White et al. (2013), like us, have only cross-section data on urban land use, essentially relying on residents who move from one urban area to another in order to provide variation in and therewith identify the effects of greens on residential well-being. As a result, White et al. (2013), like us, cannot account for the problem of simultaneity and therewith cannot claim that the effects identified are causal. However, the problem of simultaneity has been found to be minor elsewhere and here.

[32]Intuitively, our data on urban land use are not entirely free of methodological issues themselves. For example, they only include objects of a minimum size of 0.25 hectares. In fact, this introduces measurement error as the accumulation of objects of smaller sizes is neglected, which is problematic in case that buffer areas are large. However, the bias resulting from this measurement error is minor as the pre-defined buffer area of 1,000 metres around households is rather small.

Bertram and Rehdanz (2014), using cross-section data from the European Urban Atlas (EUA), adopt a similar approach in terms of the data on urban land use, especially when it comes to using distances to and coverages of greens, but, using cross-section data from a web survey, adopt a different approach in terms of the empirical model. In fact, their empirical model can neither account for the problem of simultaneity nor for the problem of unobserved heterogeneity among residents. However, the latter has been found to be important in studies of life satisfaction, especially in those that argue in favour of set points of life satisfaction.[33]

For urban planning and development, we can calculate the net well-being benefit in pecuniary terms which arises, on average, when increasing the coverage of greens in a pre-defined buffer area of 1,000 metres around households by one hectare, especially when considering that there is, on average, an under-supply of greens, given that the mean and optimal value is 23 and 33 hectares, respectively. We know that the gross well-being benefit in pecuniary terms which arises, on average, when increasing the coverage of greens in a pre-defined buffer area of 1,000 metres around households by one hectare is 933,647 Euro annually.[34] The costs for the construction and maintenance of greens differ between cities and neighbourhoods depending on the type of facilities and intensity of usage. We take Berlin as an example. The average construction costs of greens range from 5 Euro per square metre for greens located near the city periphery, with average quality and no particular infrastructure, to 201 Euro per square metre for greens located near the city centre, with high quality and

[33]Although Bertram and Rehdanz (2014) can neither account for the problem of simultaneity nor for the problem of unobserved heterogeneity among residents, their arrive at a similar marginal willingness-to-pay (MWTP) of residents in order to increase the coverage of greens. We find that, ceteris paribus, residents are, on average, willing to pay 23 Euro of monthly net individual income in order to increase the coverage of greens in a pre-defined buffer area of 1,000 metres around households by one hectare, which is almost equal to the 25 Euro calculated by Bertram and Rehdanz (2014) and much less than the 1,806 Euro calculated by Ambrey and Fleming (2012), converted with an exchange rate of 1,5130 EUR/AUD, as of December 12, 2014.

[34]We can calculate the gross well-being benefit in pecuniary terms which arises, on average, when increasing the coverage of greens in a pre-defined buffer area of 1,000 metres around households by one hectare, using the following thought experiment: We describe a circle around a new green of one hectare size such that all households within this circle have the new green in a pre-defined buffer area of 1,000 metres around them. We know that residents are, on average, willing to pay 23 Euro of monthly net individual income in order to increase the coverage of greens in a pre-defined buffer area of 1,000 metres around households by one hectare. We know that the average household size is 1.8 and the average population density is 2,177 individuals per square metre, yielding 6,089 individuals within the circle around the new green of one hectare size. We obtain the gross well-being benefit in pecuniary terms as $(12 \times 23 \times 6,089)/1.8 = 933,647$. See Figure C.5 for an illustration.

cost-intensive infrastructure, yielding average construction costs for an additional hectare of green between 3,333 and 134,000 Euro annually (Senate Department for Urban Development and the Environment, 2010). The average maintenance costs of greens range from 2 Euro annually per square metre for greens with no particular infrastructure to 7 Euro annually per square metre for greens with cost-intensive infrastructure, yielding average maintenance costs for an additional hectare of green between 20,000 and 70,000 Euro annually (Senate Department of Finance, 2013). The average life span of greens is 15 years, after which major reinvestments become necessary. As such, the average total costs for an additional hectare of green range between 23,333 and 204,000 Euro annually. Thus, the net well-being benefit in pecuniary terms which arises, on average, when increasing the coverage of greens in a pre-defined buffer area of 1,000 metres around households by one hectare ranges between 729,647 and 910,314 Euro annually.

## 7. Conclusion

This paper investigated the effects of urban green and abandoned areas on residential well-being in major German cities, using panel data from the German Socio-Economic Panel (SOEP) for the time period between 2000 and 2012 and cross-section data from the European Urban Atlas (EUA) for the year 2006. It showed that, for the 32 major German cities with more than 100,000 inhabitants, access to greens matters for residential well-being, but access to abandoned areas matters more, whereas access to forests and waters does not matter much.[35] In fact, coverage of and even more proximity to greens is significantly positively associated, whereas proximity to and even more coverage of abandoned areas is significantly negatively associated with life satisfaction, both of which is diminishing in the amount of the respective area, whereby mental and physical health, in particular *social functioning*, bodily pain, and *physical functioning*, are important transmission mechanisms. The effects are strongest for residents who are older, accounting for up to a third of the size of the effect of being unemployed on life satisfaction.

Using data from the Berlin Aging Study II (BASE-II) for the time period between 2009 and 2012, this paper also showed that there is no systematic difference between subjective and objective access to greens and that (older) residents who report living closer to greens have been diagnosed significantly less often with certain medical conditions, including diabetes, sleep disorder, and joint disease.

[35] We also find that access to greens and abandoned areas matters more in cities with lower shares of greens and abandoned areas, respectively, et vice versa. The results are available on request.

Although this paper is the most extensive study of the effects of urban green and abandoned areas on residential well-being in Germany so far, there is a lot of room for further research. Specifically, further research should be directed towards establishing the causality of these effects, possibly by exploiting novel panel data sets on and exogenous variations in urban green and abandoned area which might be available in the future. Moreover, further research should be directed towards incorporating the role that quality of urban green and abandoned area plays for residential well-being. Taken together, the spatial analysis of the relationship between urban land use and residential well-being therefore remains a promising field of research.

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## Appendix A. Data

Table A.1: Independent Variables of Interest

| Variables | Descriptions | Examples | EUA Categories |
|---|---|---|---|
| *Green Areas* | | | |
| Greens | Includes all greens which are public and have predominantly recreational use[a] | Parks, Gardens, Zoos | 1.4.1 |
| Forests | Includes all forests with ground coverage of tree canopy greater than 30% and tree height greater than 5 metres | - | 3 |
| Waters | Includes all waters greater than 1 hectare | Lakes, Rivers, Canals | 4 |
| Abandoned Areas | Includes all land without use | Brownfields | 1.3.4 |

[a] This category also incorporates playgrounds and smaller sport facilities located within greens.

*Source:* EUA 2006

Table A.2: Descriptive Statistics

| Variables | Mean | Standard Deviation | Minimum | Maximum | Number of Observations |
|---|---|---|---|---|---|
| *Dependent Variables* | | | | | |
| Satisfaction With Life | 6.9946 | 1.7699 | 0 | 10 | 42,256 |
| Mental Health Summary Scale | 50.3863 | 9.6176 | 1.9180 | 77.2937 | 27,289 |
| Mental Health in General | 50.5766 | 9.4727 | 19.7313 | 68.5833 | 27,291 |
| Role-Emotional Functioning | 50.1614 | 9.4034 | 13.3378 | 58.0805 | 27,291 |
| Social Functioning | 50.0287 | 9.6035 | 14.6924 | 57.1192 | 27,291 |
| Vitality | 49.9840 | 9.3923 | 26.8214 | 70.6042 | 27,291 |
| Physical Health Summary Scale | 49.7667 | 9.8265 | 10.5547 | 79.6030 | 31,913 |
| Bodily Pain | 50.2577 | 9.5606 | 23.0030 | 59.8489 | 31,913 |
| Role-Physical Functioning | 50.0572 | 9.6731 | 21.9237 | 59.7166 | 31,913 |
| Physical Functioning | 49.7336 | 9.6941 | 27.2504 | 58.3546 | 31,913 |
| Body-Mass Index | 25.2954 | 4.4068 | 13.0530 | 73.0460 | 33,203 |
| *Independent Variables of Interest* | | | | | |
| Distance to Greens | 2.7860 | 2.6819 | 0 | 40.0621 | 42,256 |
| Distance to Forests | 18.5378 | 16.9615 | 0 | 91.2399 | 42,256 |
| Distance to Waters | 13.0626 | 9.7460 | 0 | 85.3310 | 42,256 |
| Distance to Abandoned Areas | 9.6092 | 6.6843 | 0 | 53.4247 | 42,256 |
| Coverage of Greens | 22.6464 | 20.3382 | 0 | 194.2405 | 42,256 |
| Coverage of Forests | 11.3870 | 26.2562 | 0 | 261.8127 | 42,256 |
| Coverage of Waters | 6.1407 | 13.6202 | 0 | 148.7035 | 42,256 |
| Coverage of Abandoned Areas | 1.4027 | 2.1019 | 0 | 35.8380 | 42,256 |
| *Other Independent Variables - Geo Level* | | | | | |
| Distance to City Centre | 58.7486 | 39.7389 | 0.6122 | 253.0730 | 42,256 |
| Distance to City Periphery | 32.1597 | 22.1740 | 0.0490 | 117.2422 | 42,256 |
| *Other Independent Variables - Micro Level* | | | | | |
| Age | 48.7359 | 17.5575 | 17 | 99 | 42,256 |
| Is Female | 0.5304 | 0.4991 | 0 | 1 | 42,256 |
| Is Married | 0.5670 | 0.4955 | 0 | 1 | 42,255 |
| Is Divorced | 0.0853 | 0.2793 | 0 | 1 | 42,255 |
| Is Widowed | 0.0611 | 0.2394 | 0 | 1 | 42,255 |
| Has Very Good Health | 0.1003 | 0.3004 | 0 | 1 | 42,203 |
| Has Very Bad Health | 0.0409 | 0.1980 | 0 | 1 | 42,203 |
| Is Disabled | 0.1280 | 0.3341 | 0 | 1 | 42,078 |

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| Variables | Mean | Standard Deviation | Minimum | Maximum | Number of Observations |
|---|---|---|---|---|---|
| Has Migration Background | 0.1655 | 0.3717 | 0 | 1 | 42,103 |
| Has Tertiary Degree | 0.3599 | 0.4800 | 0 | 1 | 41,143 |
| Has Lower Than Secondary Degree | 0.1321 | 0.3386 | 0 | 1 | 41,143 |
| Is in Education | 0.0188 | 0.1357 | 0 | 1 | 42,256 |
| Is Full-Time Employed | 0.4065 | 0.4912 | 0 | 1 | 42,256 |
| Is Part-Time Employed | 0.0988 | 0.2984 | 0 | 1 | 42,256 |
| Is on Parental Leave | 0.0209 | 0.1430 | 0 | 1 | 42,256 |
| Is Unemployed | 0.0719 | 0.2583 | 0 | 1 | 42,256 |
| Individual Income[a] | 1,285.2635 | 2,256.8580 | 0 | 50,000.0860 | 24,208 |
| Has Child in Household | 0.2367 | 0.4250 | 0 | 1 | 42,256 |
| Household Income[a] | 2,512.9267 | 1,659.3480 | 0 | 101,097.7700 | 42,240 |
| Lives in House[b] | 0.2244 | 0.4172 | 0 | 1 | 6,698 |
| Lives in Small Apartment Building | 0.0991 | 0.2989 | 0 | 1 | 6,698 |
| Lives in Large Apartment Building | 0.3235 | 0.4679 | 0 | 1 | 6,698 |
| Lives in High Rise | 0.0340 | 0.1813 | 0 | 1 | 6,698 |
| Number of Rooms per Individual | 1.6888 | 0.8555 | 0.2500 | 13 | 38,078 |
| *Other Independent Variables - Macro Level* | | | | | |
| Unemployment Rate | 11.9809 | 3.9593 | 4.5000 | 20.8000 | 40,649 |
| Average Household Income[a] | 1,484.1110 | 244.8841 | 1,047.2000 | 2,050.4000 | 34,974 |

[a] Annually in Euro/Inflation-Adjusted (Base Year 2000), [b] Detached, Semi-Detached, or Terraced

*Note:* The respective distance is measured as the Euclidean distance in 100 metres between households and the border of the nearest area of interest. The respective coverage is measured as the hectares covered by the area of interest in a pre-defined buffer area of 1,000 metres around households. All figures are rounded to four decimal places.

*Source:* SOEP 2000-2012, individuals aged 17 or above, own tabulations

## Appendix B. Results

Table B.1: Results - Final Sample, Satisfaction With Life, OLS/FE Models, *Distances*

| | Satisfaction With Life | | | |
|---|---|---|---|---|
| Regressors | OLS | OLS | FE | FE |
| Distance to Greens | 0.0010 | -0.0106* | -0.0287** | -0.0409*** |
| | (0.0062) | (0.0062) | (0.0117) | (0.0134) |
| Distance to Forests | -0.0083*** | -0.0035** | 0.0005 | -0.0020 |
| | (0.0016) | (0.0017) | (0.0043) | (0.0050) |
| Distance to Waters | -0.0056** | -0.0025 | 0.0050 | 0.0049 |
| | (0.0024) | (0.0025) | (0.0059) | (0.0067) |
| Distance to Abandoned Areas | 0.0333*** | 0.0239*** | 0.0186** | 0.0259*** |
| | (0.0041) | (0.0041) | (0.0087) | (0.0099) |
| Distance to Greens Squared | 0.0005 | 0.0004 | 0.0011** | 0.0012* |
| | (0.0004) | (0.0004) | (0.0005) | (0.0006) |
| Distance to Forests Squared | 0.0001*** | 0.0000 | -0.0000 | -0.0000 |
| | (0.0000) | (0.0000) | (0.0001) | (0.0001) |
| Distance to Waters Squared | 0.0001 | 0.0000 | -0.0002 | -0.0001 |
| | (0.0001) | (0.0001) | (0.0002) | (0.0002) |
| Distance to Abandoned Areas Squared | -0.0007*** | -0.0005*** | -0.0006* | -0.0009** |
| | (0.0001) | (0.0002) | (0.0003) | (0.0004) |
| Distance to City Centre | -0.0039*** | -0.0023*** | -0.0000 | -0.0008 |
| | (0.0007) | (0.0008) | (0.0024) | (0.0028) |
| Distance to City Periphery | -0.0046*** | -0.0005 | 0.0044 | -0.0004 |
| | (0.0014) | (0.0014) | (0.0036) | (0.0042) |
| Distance to City Centre Squared | 0.0000*** | 0.0000** | 0.0000 | 0.0000 |
| | (0.0000) | (0.0000) | (0.0000) | (0.0000) |
| Distance to City Periphery Squared | -0.0000 | -0.0000 | -0.0000 | 0.0000 |
| | (0.0000) | (0.0000) | (0.0000) | (0.0000) |
| Age | | -0.0523*** | | -0.0230** |
| | | (0.0038) | | (0.0112) |
| Age Squared | | 0.0005*** | | -0.0002** |
| | | (0.0000) | | (0.0001) |
| Is Female | | 0.0530*** | | |
| | | (0.0192) | | |
| Is Married | | 0.1298*** | | -0.0113 |
| | | (0.0300) | | (0.0656) |
| Is Divorced | | -0.1419*** | | -0.0957 |
| | | (0.0394) | | (0.0944) |
| Is Widowed | | 0.0340 | | -0.2249* |
| | | (0.0497) | | (0.1262) |
| Has Very Good Health | | 0.9769*** | | 0.3642*** |
| | | (0.0298) | | (0.0306) |
| Has Very Bad Health | | -2.2185*** | | -1.2265*** |
| | | (0.0465) | | (0.0475) |
| Is Disabled | | -0.3142*** | | -0.1614*** |
| | | (0.0286) | | (0.0458) |
| Has Migration Background | | -0.0412* | | |
| | | (0.0249) | | |
| Has Tertiary Degree | | 0.0326 | | -0.1028 |
| | | (0.0212) | | (0.0748) |
| Has Lower Than Secondary Degree | | -0.1465*** | | -0.0218 |
| | | (0.0275) | | (0.1018) |

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| Regressors | OLS | Satisfaction With Life OLS | FE | FE |
|---|---|---|---|---|
| Is in Education | | -0.0622 | | 0.1147 |
| | | (0.0741) | | (0.0832) |
| Is Full-Time Employed | | -0.1862*** | | 0.0461 |
| | | (0.0395) | | (0.0416) |
| Is Part-Time Employed | | -0.0736** | | -0.0316 |
| | | (0.0369) | | (0.0421) |
| Is on Parental Leave | | 0.3627*** | | 0.2905*** |
| | | (0.0644) | | (0.0653) |
| Is Unemployed | | -0.9212*** | | -0.5218*** |
| | | (0.0412) | | (0.0447) |
| Individual Income[a] | | 0.1208*** | | 0.0454** |
| | | (0.0236) | | (0.0200) |
| Has Child in Household | | -0.0025 | | 0.0226 |
| | | (0.0258) | | (0.0370) |
| Household Income[a] | | 0.2947*** | | 0.1372*** |
| | | (0.0173) | | (0.0241) |
| Lives in House[b] | | 0.0098 | | 0.0102 |
| | | (0.0427) | | (0.0305) |
| Lives in Small Apartment Building | | 0.0308 | | 0.0130 |
| | | (0.0424) | | (0.0339) |
| Lives in Large Apartment Building | | -0.0364 | | -0.0163 |
| | | (0.0298) | | (0.0298) |
| Lives in High Rise | | -0.0460 | | -0.0167 |
| | | (0.0700) | | (0.0453) |
| Number of Rooms per Individual | | 0.1225*** | | 0.0138 |
| | | (0.0156) | | (0.0202) |
| Unemployment Rate | | -0.0323*** | | -0.0223*** |
| | | (0.0035) | | (0.0048) |
| Average Household Income | | 0.0000 | | 0.0001 |
| | | (0.0001) | | (0.0002) |
| Constant | 7.2520*** | 4.6331*** | 6.5241*** | 6.9023*** |
| | (0.0452) | (0.2103) | (0.2712) | (0.4662) |
| Number of Observations | 42,256 | 33,782 | 42,256 | 33,782 |
| Number of Individuals | 8,014 | 6,959 | 8,014 | 6,959 |
| F-Statistic | 37.8500 | 160.7500 | 2.6600 | 369.8400 |
| $R^2$ | 0.0108 | 0.2024 | 0.0029 | 0.0575 |
| Adjusted $R^2$ | 0.0105 | 0.2015 | 0.0018 | 0.0556 |

[a] Annually in Euro/Inflation-Adjusted (Base Year 2000), [b] Detached, Semi-Detached, or Terraced

*Robust standard errors in parentheses*
**** p<0.01, ** p<0.05, * p<0.1*

*Note:* The respective distance is measured as the Euclidean distance in 100 metres between households and the border of the nearest area of interest.
All figures are rounded to four decimal places.

*Source:* SOEP 2000-2012, individuals aged 17 or above, own calculations

Table B.2: Results - Final Sample, Satisfaction With Life, OLS/FE Models, *Coverages*

| | Satisfaction With Life | | | |
|---|---|---|---|---|
| Regressors | OLS | OLS | FE | FE |
| Coverage of Greens | -0.0003 | 0.0027*** | 0.0038* | 0.0066*** |
| | (0.0010) | (0.0010) | (0.0022) | (0.0025) |
| Coverage of Forests | 0.0072*** | 0.0022*** | -0.0017 | -0.0019 |
| | (0.0008) | (0.0008) | (0.0017) | (0.0020) |
| Coverage of Waters | 0.0025* | 0.0015 | -0.0012 | -0.0046 |
| | (0.0014) | (0.0015) | (0.0026) | (0.0031) |
| Coverage of Abandoned Areas | -0.0466*** | -0.0340*** | -0.0342*** | -0.0395*** |
| | (0.0070) | (0.0069) | (0.0131) | (0.0145) |
| Coverage of Greens Squared | -0.0000 | -0.0000*** | -0.0000* | -0.0001*** |
| | (0.0000) | (0.0000) | (0.0000) | (0.0000) |
| Coverage of Forests Squared | -0.0000*** | -0.0000** | 0.0000 | 0.0000 |
| | (0.0000) | (0.0000) | (0.0000) | (0.0000) |
| Coverage of Waters Squared | -0.0000 | -0.0000 | 0.0000 | 0.0001* |
| | (0.0000) | (0.0000) | (0.0000) | (0.0000) |
| Coverage of Abandoned Areas Squared | 0.0016** | 0.0009 | 0.0013 | 0.0015* |
| | (0.0007) | (0.0006) | (0.0009) | (0.0009) |
| Age | | -0.0525*** | | -0.0230** |
| | | (0.0038) | | (0.0112) |
| Age Squared | | 0.0005*** | | -0.0002** |
| | | (0.0000) | | (0.0001) |
| Is Female | | 0.0542*** | | |
| | | (0.0192) | | |
| Is Married | | 0.1321*** | | -0.0065 |
| | | (0.0300) | | (0.0656) |
| Is Divorced | | -0.1452*** | | -0.0910 |
| | | (0.0394) | | (0.0945) |
| Is Widowed | | 0.0390 | | -0.2145* |
| | | (0.0497) | | (0.1262) |
| Has Very Good Health | | 0.9801*** | | 0.3626*** |
| | | (0.0298) | | (0.0306) |
| Has Very Bad Health | | -2.2225*** | | -1.2264*** |
| | | (0.0466) | | (0.0475) |
| Is Disabled | | -0.3105*** | | -0.1590*** |
| | | (0.0286) | | (0.0458) |
| Has Migration Background | | -0.0435* | | |
| | | (0.0249) | | |
| Has Tertiary Degree | | 0.0312 | | -0.1193 |
| | | (0.0211) | | (0.0748) |
| Has Lower Than Secondary Degree | | -0.1456*** | | -0.0195 |
| | | (0.0275) | | (0.1017) |
| Is in Education | | -0.0648 | | 0.1156 |
| | | (0.0742) | | (0.0832) |
| Is Full-Time Employed | | -0.1873*** | | 0.0449 |
| | | (0.0391) | | (0.0415) |
| Is Part-Time Employed | | -0.0792** | | -0.0308 |
| | | (0.0368) | | (0.0421) |
| Is on Parental Leave | | 0.3548*** | | 0.2782*** |
| | | (0.0644) | | (0.0653) |
| Is Unemployed | | -0.9190*** | | -0.5215*** |
| | | (0.0412) | | (0.0447) |

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| | Satisfaction With Life | | | |
|---|---|---|---|---|
| Regressors | OLS | OLS | FE | FE |
| Individual Income[a] | | 0.1198*** | | 0.0442** |
| | | (0.0233) | | (0.0199) |
| Has Child in Household | | -0.0023 | | 0.0195 |
| | | (0.0258) | | (0.0370) |
| Household Income[a] | | 0.2957*** | | 0.1380*** |
| | | (0.0173) | | (0.0241) |
| Lives in House[b] | | 0.0087 | | 0.0095 |
| | | (0.0413) | | (0.0305) |
| Lives in Small Apartment Building | | 0.0370 | | 0.0120 |
| | | (0.0426) | | (0.0340) |
| Lives in Large Apartment Building | | -0.0465 | | -0.0165 |
| | | (0.0303) | | (0.0301) |
| Lives in High Rise | | -0.0635 | | -0.0172 |
| | | (0.0700) | | (0.0451) |
| Number of Rooms per Individual | | 0.1251*** | | 0.0142 |
| | | (0.0156) | | (0.0204) |
| Unemployment Rate | | -0.0375*** | | -0.0222*** |
| | | (0.0033) | | (0.0048) |
| Average Household Income | | 0.0000 | | 0.0002 |
| | | (0.0001) | | (0.0002) |
| Constant | 6.9919*** | 4.6442*** | 6.7291*** | 6.8627*** |
| | (0.0204) | (0.2090) | (0.1187) | (0.3773) |
| Number of Observations | 42,256 | 33,782 | 42,256 | 33,782 |
| Number of Individuals | 8,014 | 6,959 | 8,014 | 6,959 |
| F-Statistic | 30.6700 | 175.3200 | 2.8400 | 391.3500 |
| $R^2$ | 0.0055 | 0.2013 | 0.0027 | 0.0575 |
| Adjusted $R^2$ | 0.0053 | 0.2005 | 0.0018 | 0.0557 |

[a] Annually in Euro/Inflation-Adjusted (Base Year 2000), [b] Detached, Semi-Detached, or Terraced

*Robust standard errors in parentheses*
**** p<0.01, ** p<0.05, * p<0.1*

*Note:* The respective coverage is measured as the hectares covered by the area of interest in a pre-defined buffer area of 1,000 metres around households.
All figures are rounded to four decimal places.

*Source:* SOEP 2000-2012, individuals aged 17 or above, own calculations

Table B.3: Results - Non-Mover/Mover Sub-Samples, Satisfaction With Life, OLS/FE Models, *Distances*

| | Satisfaction With Life | |
|---|---|---|
| Regressors | OLS – (1) | FE – (2) |
| Distance to Greens | -0.0379*** | -0.0415*** |
| | (0.0104) | (0.0137) |
| Distance to Forests | -0.0085*** | -0.0017 |
| | (0.0026) | (0.0051) |
| Distance to Waters | -0.0098** | 0.0051 |
| | (0.0039) | (0.0069) |
| Distance to Abandoned Areas | 0.0169*** | 0.0272*** |
| | (0.0064) | (0.0101) |
| Distance to Greens Squared | 0.0022*** | 0.0012* |
| | (0.0007) | (0.0006) |
| Distance to Forests Squared | 0.0001*** | -0.0000 |
| | (0.0000) | (0.0001) |
| Distance to Waters Squared | 0.0001 | -0.0001 |
| | (0.0001) | (0.0002) |
| Distance to Abandoned Areas Squared | -0.0004 | -0.0009** |
| | (0.0002) | (0.0004) |
| Distance to City Centre | 0.0002 | -0.0008 |
| | (0.0011) | (0.0029) |
| Distance to City Periphery | 0.0062*** | -0.0006 |
| | (0.0022) | (0.0042) |
| Distance to City Centre Squared | -0.0000 | 0.0000 |
| | (0.0000) | (0.0000) |
| Distance to City Periphery Squared | -0.0001*** | 0.0000 |
| | (0.0000) | (0.0000) |
| Age | -0.0177*** | -0.0253* |
| | (0.0058) | (0.0151) |
| Age Squared | 0.0002*** | 0.0000 |
| | (0.0001) | (0.0001) |
| Is Female | 0.0081 | |
| | (0.0294) | |
| Is Married | 0.1384*** | -0.0990 |
| | (0.0473) | (0.0754) |
| Is Divorced | -0.0698 | -0.2950*** |
| | (0.0620) | (0.1095) |
| Is Widowed | 0.0712 | -0.4654** |
| | (0.0665) | (0.1848) |
| Has Very Good Health | 1.0803*** | 0.3766*** |
| | (0.0489) | (0.0386) |
| Has Very Bad Health | -2.0663*** | -1.3418*** |
| | (0.0637) | (0.0683) |
| Is Disabled | -0.3204*** | -0.2195*** |
| | (0.0392) | (0.0662) |
| Has Migration Background | -0.0186 | |
| | (0.0396) | |
| Has Tertiary Degree | -0.0295 | -0.1396 |
| | (0.0321) | (0.0855) |
| Has Lower Than Secondary Degree | -0.0121 | -0.1645 |
| | (0.0420) | (0.1207) |
| Is in Education | -0.0032 | 0.1781* |
| | (0.1605) | (0.0946) |

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| Regressors | Satisfaction With Life OLS – (1) | FE – (2) |
|---|---|---|
| Is Full-Time Employed | -0.2024*** | 0.0891* |
| | (0.0592) | (0.0540) |
| Is Part-Time Employed | -0.0896 | -0.0362 |
| | (0.0576) | (0.0536) |
| Is on Parental Leave | 0.4196*** | 0.2876*** |
| | (0.1301) | (0.0749) |
| Is Unemployed | -0.8328*** | -0.4954*** |
| | (0.0693) | (0.0567) |
| Individual Income[a] | 0.1114*** | 0.0564* |
| | (0.0342) | (0.0281) |
| Has Child in Household | -0.0411 | 0.0590 |
| | (0.0433) | (0.0432) |
| Household Income[a] | 0.3116*** | 0.1469*** |
| | (0.0267) | (0.0290) |
| Lives in House[b] | 0.0231 | 0.0105 |
| | (0.0726) | (0.0383) |
| Lives in Small Apartment Building | 0.0059 | 0.0089 |
| | (0.0524) | (0.0451) |
| Lives in Large Apartment Building | -0.0154 | -0.0225 |
| | (0.0430) | (0.0297) |
| Lives in High Rise | 0.0217 | -0.0337 |
| | (0.0936) | (0.0644) |
| Number of Rooms per Individual | 0.1190*** | 0.0202 |
| | (0.0205) | (0.0268) |
| Unemployment Rate | -0.0353*** | -0.0214*** |
| | (0.0053) | (0.0064) |
| Average Household Income | 0.0000 | -0.0001 |
| | (0.0001) | (0.0003) |
| Constant | 3.8213*** | 6.3752*** |
| | (0.3303) | (0.5253) |
| Number of Observations | 14,828 | 18,938 |
| Number of Individuals | 3,552 | 3,407 |
| F-Statistic | 81.6600 | 13.7500 |
| $R^2$ | 0.1957 | 0.2143 |
| Adjusted $R^2$ | 0.1936 | 0.2126 |

[a] Annually in Euro/Inflation-Adjusted (Base Year 2000), [b] Detached, Semi-Detached, or Terraced

(1) Non-Mover Sub-Sample, (2) Mover Sub-Sample

*Robust standard errors in parentheses*
**** p<0.01, ** p<0.05, * p<0.1*

*Note:* The respective distance is measured as the Euclidean distance in 100 metres between households and the border of the nearest area of interest.
All figures are rounded to four decimal places.

*Source:* SOEP 2000-2012, individuals aged 17 or above, own calculations

Table B.4: Results - Non-Mover/Mover Sub-Samples, Satisfaction With Life, OLS/FE Models, *Coverages*

| | Satisfaction With Life | |
|---|---|---|
| Regressors | OLS – (1) | FE – (2) |
| Coverage of Greens | -0.0008 | 0.0065** |
| | (0.0014) | (0.0026) |
| Coverage of Forests | 0.0010 | -0.0021 |
| | (0.0011) | (0.0020) |
| Coverage of Waters | 0.0054** | -0.0044 |
| | (0.0023) | (0.0031) |
| Coverage of Abandoned Areas | -0.0308** | -0.0376** |
| | (0.0133) | (0.0148) |
| Coverage of Greens Squared | -0.0000 | -0.0001*** |
| | (0.0000) | (0.0000) |
| Coverage of Forests Squared | 0.0000 | 0.0000 |
| | (0.0000) | (0.0000) |
| Coverage of Waters Squared | -0.0001** | 0.0001* |
| | (0.0000) | (0.0000) |
| Coverage of Abandoned Areas Squared | 0.0018 | 0.0014 |
| | (0.0015) | (0.0009) |
| Age | -0.0178*** | -0.0248* |
| | (0.0058) | (0.0150) |
| Age Squared | 0.0002*** | 0.0000 |
| | (0.0001) | (0.0001) |
| Is Female | 0.0049 | |
| | (0.0295) | |
| Is Married | 0.1440*** | -0.0932 |
| | (0.0472) | (0.0755) |
| Is Divorced | -0.0594 | -0.2893*** |
| | (0.0621) | (0.1096) |
| Is Widowed | 0.0823 | -0.4457** |
| | (0.0663) | (0.1847) |
| Has Very Good Health | 1.0727*** | 0.3741*** |
| | (0.0490) | (0.0386) |
| Has Very Bad Health | -2.0644*** | -1.3419*** |
| | (0.0638) | (0.0683) |
| Is Disabled | -0.3208*** | -0.2148*** |
| | (0.0392) | (0.0662) |
| Has Migration Background | -0.0238 | |
| | (0.0397) | |
| Has Tertiary Degree | -0.0471 | -0.1587* |
| | (0.0320) | (0.0855) |
| Has Lower Than Secondary Degree | -0.0213 | -0.1593 |
| | (0.0422) | (0.1206) |
| Is in Education | 0.0173 | 0.1785* |
| | (0.1606) | (0.0945) |
| Is Full-Time Employed | -0.2036*** | 0.0880 |
| | (0.0587) | (0.0540) |
| Is Part-Time Employed | -0.0851 | -0.0345 |
| | (0.0576) | (0.0536) |
| Is on Parental Leave | 0.4390*** | 0.2726*** |
| | (0.1301) | (0.0749) |
| Is Unemployed | -0.8428*** | -0.4955*** |
| | (0.0693) | (0.0567) |

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| Regressors | Satisfaction With Life OLS – (1) | FE – (2) |
|---|---|---|
| Individual Income[a] | 0.1084*** | 0.0543* |
| | (0.0338) | (0.0281) |
| Has Child in Household | -0.0315 | 0.0548 |
| | (0.0432) | (0.0432) |
| Household Income[a] | 0.3147*** | 0.1475*** |
| | (0.0266) | (0.0289) |
| Lives in House[b] | 0.0196 | 0.0093 |
| | (0.0709) | (0.0381) |
| Lives in Small Apartment Building | 0.0082 | 0.0072 |
| | (0.0534) | (0.0449) |
| Lives in Large Apartment Building | -0.0249 | -0.0227 |
| | (0.0439) | (0.0302) |
| Lives in High Rise | -0.0105 | -0.0347 |
| | (0.0968) | (0.0640) |
| Number of Rooms per Individual | 0.1215*** | 0.0208 |
| | (0.0203) | (0.0271) |
| Unemployment Rate | -0.0380*** | -0.0212*** |
| | (0.0050) | (0.0064) |
| Average Household Income | 0.0000 | -0.0001 |
| | (0.0001) | (0.0003) |
| Constant | 3.7212*** | 6.3184*** |
| | (0.3307) | (0.4443) |
| Number of Observations | 14,828 | 18,938 |
| Number of Individuals | 3,552 | 3,407 |
| F-Statistic | 88.6900 | 14.5100 |
| $R^2$ | 0.1934 | 0.2146 |
| Adjusted $R^2$ | 0.1914 | 0.2131 |

[a] Annually in Euro/Inflation-Adjusted (Base Year 2000), [b] Detached, Semi-Detached, or Terraced

(1) Non-Mover Sub-Sample, (2) Mover Sub-Sample

*Robust standard errors in parentheses*
**** p<0.01, ** p<0.05, * p<0.1*

*Note:* The respective coverage is measured as the hectares covered by the area of interest in a pre-defined buffer area of 1,000 metres around households.
All figures are rounded to four decimal places.

*Source:* SOEP 2000-2012, individuals aged 17 or above, own calculations

Table B.5: Results - Other Sub-Samples, Satisfaction With Life, FE Models, *Distances*

| | Satisfaction With Life | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| Regressors | (1) | (2) | (3) | (4) | (5) | (6) | (7) | (8) |
| Distance to Greens | -0.0351* | -0.0450** | -0.1811*** | -0.0170 | -0.0168 | -0.0448 | -0.0127 | -0.0865*** |
| | (0.0187) | (0.0197) | (0.0388) | (0.0150) | (0.0205) | (0.0279) | (0.0254) | (0.0215) |
| Distance to Forests | 0.0030 | -0.0065 | -0.0130 | -0.0034 | 0.0020 | -0.0037 | -0.0261** | 0.0082 |
| | (0.0072) | (0.0071) | (0.0114) | (0.0058) | (0.0084) | (0.0078) | (0.0112) | (0.0063) |
| Distance to Waters | 0.0112 | -0.0002 | 0.0326* | -0.0039 | 0.0162 | -0.0015 | 0.0017 | 0.0046 |
| | (0.0094) | (0.0098) | (0.0169) | (0.0076) | (0.0123) | (0.0101) | (0.0145) | (0.0088) |
| Distance to Abandoned Areas | 0.0247* | 0.0305** | 0.0689*** | 0.0153 | 0.0665*** | -0.0047 | 0.0165 | 0.0282** |
| | (0.0139) | (0.0144) | (0.0235) | (0.0113) | (0.0161) | (0.0151) | (0.0194) | (0.0130) |
| Distance to Greens Squared | 0.0006 | 0.0019** | 0.0089*** | 0.0003 | 0.0005 | 0.0015 | 0.0003 | 0.0049*** |
| | (0.0009) | (0.0009) | (0.0023) | (0.0007) | (0.0007) | (0.0018) | (0.0009) | (0.0015) |
| Distance to Forests Squared | -0.0001 | -0.0000 | 0.0000 | 0.0000 | -0.0001 | 0.0001 | 0.0003* | -0.0001* |
| | (0.0001) | (0.0001) | (0.0001) | (0.0001) | (0.0001) | (0.0001) | (0.0002) | (0.0001) |
| Distance to Waters Squared | -0.0002 | -0.0000 | -0.0007 | 0.0001 | -0.0004 | 0.0000 | 0.0001 | -0.0002 |
| | (0.0002) | (0.0003) | (0.0005) | (0.0002) | (0.0003) | (0.0003) | (0.0004) | (0.0002) |
| Distance to Abandoned Areas Squared | -0.0008 | -0.0010* | -0.0021** | -0.0006 | -0.0020*** | -0.0000 | -0.0002 | -0.0009* |
| | (0.0005) | (0.0005) | (0.0008) | (0.0004) | (0.0006) | (0.0005) | (0.0007) | (0.0005) |
| Distance to City Centre | 0.0033 | -0.0055 | -0.0159** | 0.0026 | -0.0104** | 0.0047 | 0.0009 | 0.0029 |
| | (0.0039) | (0.0042) | (0.0070) | (0.0047) | (0.0048) | (0.0045) | (0.0073) | (0.0034) |
| Distance to City Periphery | -0.0031 | 0.0027 | -0.0433*** | 0.0096** | -0.0018 | 0.0030 | 0.0169* | -0.0037 |
| | (0.0060) | (0.0059) | (0.0108) | (0.0047) | (0.0069) | (0.0067) | (0.0091) | (0.0053) |
| Distance to City Centre Squared | -0.0000 | 0.0000 | 0.0000 | -0.0000 | 0.0001** | 0.0000 | -0.0000 | -0.0000 |
| | (0.0000) | (0.0000) | (0.0000) | (0.0000) | (0.0000) | (0.0000) | (0.0000) | (0.0000) |
| Distance to City Periphery Squared | 0.0000 | -0.0000 | 0.0004*** | -0.0001 | 0.0000 | -0.0000 | -0.0002** | 0.0001 |
| | (0.0001) | (0.0001) | (0.0001) | (0.0000) | (0.0001) | (0.0001) | (0.0001) | (0.0001) |
| Age | -0.0106 | -0.0408** | 0.0729** | -0.0580** | -0.0329* | -0.0247 | -0.1261*** | -0.0069 |
| | (0.0152) | (0.0168) | (0.0307) | (0.0242) | (0.0172) | (0.0172) | (0.0378) | (0.0141) |
| Age Squared | -0.0003** | -0.0001 | -0.0010*** | 0.0003 | -0.0000 | -0.0003** | 0.0009* | -0.0003*** |
| | (0.0001) | (0.0001) | (0.0002) | (0.0003) | (0.0002) | (0.0001) | (0.0005) | (0.0001) |
| Is Married | -0.0367 | 0.0103 | 0.1888 | 0.0135 | 0.0301 | -0.0757 | -0.2300 | 0.1126 |
| | (0.0932) | (0.0934) | (0.2325) | (0.0696) | (0.0896) | (0.1213) | (0.1418) | (0.0879) |
| Is Divorced | -0.1331 | -0.0476 | 0.1130 | -0.0406 | 0.0005 | -0.0505 | -0.2550 | 0.0563 |
| | (0.1311) | (0.1373) | (0.2590) | (0.1119) | (0.1393) | (0.1575) | (0.1963) | (0.1249) |
| Is Widowed | -0.2622* | -0.1871 | -0.1191 | 0.1617 | -0.2263 | -0.3302* | -0.1677 | -0.1233 |
| | (0.1585) | (0.2270) | (0.2568) | (0.5319) | (0.2511) | (0.1875) | (0.5173) | (0.1433) |
| Has Very Good Health | 0.3908*** | 0.3341*** | 0.3805*** | 0.3555*** | 0.3273*** | 0.3692*** | 0.2954*** | 0.3697*** |
| | (0.0439) | (0.0428) | (0.0607) | (0.0360) | (0.0389) | (0.0516) | (0.0559) | (0.0380) |
| Has Very Bad Health | -1.2075*** | -1.2483*** | -1.1941*** | -1.2842*** | -1.4036*** | -1.1158*** | -1.0596*** | -1.2139*** |
| | (0.0629) | (0.0727) | (0.0550) | (0.0982) | (0.0804) | (0.0627) | (0.1386) | (0.0509) |
| Is Disabled | -0.1378** | -0.1881*** | -0.1388*** | -0.2778*** | -0.0527 | -0.2075*** | 0.0025 | -0.1726*** |
| | (0.0640) | (0.0657) | (0.0520) | (0.1058) | (0.0710) | (0.0649) | (0.1554) | (0.0486) |
| Has Tertiary Degree | 0.0804 | -0.3274*** | -0.0834 | -0.1445* | -0.0260 | -0.2870** | -0.1086 | -0.1144 |
| | (0.1061) | (0.1076) | (0.2869) | (0.0804) | (0.1133) | (0.1211) | (0.1586) | (0.0919) |
| Has Lower Than Secondary Degree | -0.1771 | 0.1221 | -0.5879 | 0.0117 | 0.2435 | -0.2555* | -0.4718** | 0.1055 |
| | (0.1476) | (0.1428) | (0.3895) | (0.1065) | (0.1563) | (0.1526) | (0.2088) | (0.1265) |
| Is in Education | 0.1235 | 0.0798 | 0.4631 | 0.1724** | -0.0555 | 0.2784** | 0.4196** | 0.0984 |
| | (0.1194) | (0.1184) | (1.6926) | (0.0863) | (0.1265) | (0.1244) | (0.1931) | (0.0975) |

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| | Satisfaction With Life | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| Regressors | (1) | (2) | (3) | (4) | (5) | (6) | (7) | (8) |
| Is Full-Time Employed | 0.0800 | -0.0056 | -0.0724 | 0.2001*** | -0.0141 | 0.1472** | 0.1339 | 0.0002** |
| | (0.0581) | (0.0611) | (0.0607) | (0.0601) | (0.0573) | (0.0672) | (0.0943) | (0.0488) |
| Is Part-Time Employed | -0.0006 | -0.0974 | -0.1339* | 0.1015* | 0.0325 | -0.0557 | 0.0878 | -0.1069** |
| | (0.0515) | (0.0824) | (0.0688) | (0.0562) | (0.0575) | (0.0677) | (0.0783) | (0.0527) |
| Is on Parental Leave | 0.2950*** | 0.5278** | 0.1710 | 0.4057*** | 0.3202*** | 0.2477** | 0.2454*** | 0.5380** |
| | (0.0709) | (0.2619) | (0.7787) | (0.0689) | (0.0885) | (0.1092) | (0.0817) | (0.2683) |
| Is Unemployed | -0.4676*** | -0.5912*** | -0.5068*** | -0.4410*** | -0.5133*** | -0.4988*** | -0.4061*** | -0.5903*** |
| | (0.0627) | (0.0649) | (0.0678) | (0.0622) | (0.0745) | (0.0628) | (0.0900) | (0.0541) |
| Individual Income[a] | 0.0225 | 0.0714** | 0.0201 | 0.0775** | 0.0437 | 0.0454 | 0.0326 | 0.0467* |
| | (0.0282) | (0.0308) | (0.0274) | (0.0306) | (0.0285) | (0.0321) | (0.0487) | (0.0235) |
| Has Child in Household | -0.0405 | 0.0846 | 0.1603* | -0.0073 | 0.0279 | -0.0517 | | |
| | (0.0523) | (0.0521) | (0.0864) | (0.0447) | (0.0456) | (0.0705) | | |
| Household Income[a] | 0.1471*** | 0.1227*** | 0.1384*** | 0.1274*** | 0.0963* | 0.1149*** | 0.2215*** | 0.1145*** |
| | (0.0339) | (0.0354) | (0.0427) | (0.0302) | (0.0539) | (0.0390) | (0.0666) | (0.0274) |
| Lives in House[b] | 0.0209 | -0.0017 | 0.0005 | 0.0270 | 0.0287 | -0.0200 | 0.0031 | 0.0062 |
| | (0.0532) | (0.0498) | (0.0409) | (0.0498) | (0.0334) | (0.0493) | (0.0556) | (0.0359) |
| Lives in Small Apartment Building | 0.0166 | 0.0083 | 0.0198 | 0.0173 | 0.0130 | 0.0120 | 0.0237 | 0.0087 |
| | (0.0535) | (0.0473) | (0.0596) | (0.0452) | (0.0380) | (0.0565) | (0.0603) | (0.0440) |
| Lives in Large Apartment Building | 0.0004 | -0.0357 | -0.0149 | -0.0096 | 0.0096 | -0.0447 | -0.0215 | -0.0184 |
| | (0.0421) | (0.0357) | (0.0419) | (0.0317) | (0.0324) | (0.0476) | (0.0415) | (0.0398) |
| Lives in High Rise | 0.0140 | -0.0485 | 0.0144 | -0.0256 | -0.0402 | 0.0204 | -0.0531 | 0.0052 |
| | (0.0825) | (0.0689) | (0.0602) | (0.0751) | (0.0641) | (0.0667) | (0.1085) | (0.0504) |
| Number of Rooms per Individual | 0.0110 | 0.0202 | 0.0388 | -0.0210 | 0.0322 | 0.0050 | -0.0490 | 0.0278 |
| | (0.0324) | (0.0241) | (0.0312) | (0.0274) | (0.0275) | (0.0318) | (0.0772) | (0.0249) |
| Unemployment Rate | -0.0255*** | -0.0183*** | -0.0258*** | -0.0128* | -0.0094 | -0.0330*** | -0.0135 | -0.0274*** |
| | (0.0067) | (0.0070) | (0.0068) | (0.0072) | (0.0066) | (0.0075) | (0.0107) | (0.0056) |
| Average Household Income | 0.0001 | 0.0003 | 0.0006* | -0.0002 | -0.0002 | 0.0006* | 0.0002 | 0.0002 |
| | (0.0003) | (0.0003) | (0.0003) | (0.0003) | (0.0003) | (0.0004) | (0.0005) | (0.0003) |
| Constant | 6.6440*** | 7.7063*** | 6.2500*** | 6.5588*** | 7.6760*** | 6.7902*** | 7.3581*** | 6.4217*** |
| | (0.6563) | (0.6740) | (1.2801) | (0.6477) | (0.7809) | (0.7546) | (1.1134) | (0.5834) |
| Number of Observations | 17,886 | 15,896 | 16,524 | 17,258 | 17,153 | 16,629 | 8,226 | 25,556 |
| Number of Individuals | 3,647 | 3,312 | 3,248 | 4,309 | 4,392 | 4,271 | 2,170 | 5,702 |
| F-Statistic | 335.8400 | 602.1700 | 1,167.3600 | 177.0500 | 6,133.4500 | 442.2200 | 90.5700 | 298.3500 |
| $R^2$ | 0.0570 | 0.0632 | 0.0667 | 0.0546 | 0.0546 | 0.0618 | 0.0495 | 0.0619 |
| Adjusted $R^2$ | 0.0535 | 0.0592 | 0.0640 | 0.0509 | 0.0514 | 0.0580 | 0.0443 | 0.0594 |

[a] Annually in Euro/Inflation-Adjusted (Base Year 2000), [b] Detached, Semi-Detached, or Terraced

(1) Female Sub-Sample, (2) Male Sub-Sample, (3) Old-Age Sub-Sample, (4) Young-Age Sub-Sample,
(5) High-Income Sub-Sample, (6) Low-Income Sub-Sample, (7) Child Sub-Sample, (8) Non-Child Sub-Sample

*Robust standard errors in parentheses*
**** p<0.01, ** p<0.05, * p<0.1*

*Note:* The respective distance is measured as the Euclidean distance in 100 metres between households and the border of the nearest area of interest. All figures are rounded to four decimal places.

*Source:* SOEP 2000-2012, individuals aged 17 or above, own calculations

Table B.6: Results - Other Sub-Samples, Satisfaction With Life, FE Models, *Coverages*

| | Satisfaction With Life | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| Regressors | (1) | (2) | (3) | (4) | (5) | (6) | (7) | (8) |
| Coverage of Greens | 0.0064* | 0.0064* | 0.0184*** | 0.0036 | 0.0080** | 0.0099** | 0.0062 | 0.0059* |
| | (0.0035) | (0.0037) | (0.0061) | (0.0029) | (0.0039) | (0.0040) | (0.0052) | (0.0032) |
| Coverage of Forests | -0.0015 | -0.0025 | -0.0004 | -0.0012 | 0.0010 | -0.0047 | 0.0043 | -0.0030 |
| | (0.0025) | (0.0033) | (0.0046) | (0.0023) | (0.0038) | (0.0030) | (0.0037) | (0.0027) |
| Coverage of Waters | -0.0083* | -0.0011 | -0.0037 | -0.0037 | -0.0151** | 0.0079* | -0.0215*** | 0.0026 |
| | (0.0046) | (0.0042) | (0.0076) | (0.0035) | (0.0059) | (0.0048) | (0.0077) | (0.0038) |
| Coverage of Abandoned Areas | -0.0437* | -0.0310 | -0.0663** | -0.0201 | -0.1957*** | 0.0004 | -0.0166 | -0.0542*** |
| | (0.0230) | (0.0193) | (0.0292) | (0.0190) | (0.0412) | (0.0214) | (0.0296) | (0.0183) |
| Coverage of Greens Squared | -0.0000 | -0.0001** | -0.0002*** | -0.0000 | -0.0001 | -0.0001*** | -0.0001 | -0.0001* |
| | (0.0000) | (0.0000) | (0.0001) | (0.0000) | (0.0000) | (0.0000) | (0.0000) | (0.0000) |
| Coverage of Forests Squared | 0.0000 | 0.0000 | 0.0000 | 0.0000 | -0.0000 | 0.0000 | -0.0000 | 0.0000 |
| | (0.0000) | (0.0000) | (0.0000) | (0.0000) | (0.0000) | (0.0000) | (0.0000) | (0.0000) |
| Coverage of Waters Squared | 0.0001* | 0.0000 | 0.0000 | 0.0001* | 0.0002** | -0.0000 | 0.0002** | -0.0000 |
| | (0.0001) | (0.0000) | (0.0001) | (0.0000) | (0.0001) | (0.0001) | (0.0001) | (0.0000) |
| Coverage of Abandoned Areas Squared | 0.0003 | 0.0017 | 0.0026** | -0.0004 | 0.0170*** | 0.0001 | -0.0003 | 0.0029** |
| | (0.0016) | (0.0010) | (0.0012) | (0.0015) | (0.0046) | (0.0010) | (0.0013) | (0.0012) |
| Age | -0.0116 | -0.0392** | 0.0754** | -0.0588** | -0.0362** | -0.0211 | -0.1213*** | -0.0059 |
| | (0.0152) | (0.0168) | (0.0306) | (0.0242) | (0.0172) | (0.0172) | (0.0376) | (0.0141) |
| Age Squared | -0.0003** | -0.0001 | -0.0010*** | 0.0003 | -0.0000 | -0.0003** | 0.0009* | -0.0003*** |
| | (0.0001) | (0.0001) | (0.0002) | (0.0003) | (0.0002) | (0.0001) | (0.0005) | (0.0001) |
| Is Married | -0.0274 | 0.0067 | 0.1655 | 0.0189 | 0.0352 | -0.0641 | -0.2040 | 0.1160 |
| | (0.0932) | (0.0934) | (0.2327) | (0.0697) | (0.0897) | (0.1211) | (0.1414) | (0.0878) |
| Is Divorced | -0.1213 | -0.0546 | 0.0709 | -0.0373 | 0.0278 | -0.0453 | -0.2099 | 0.0591 |
| | (0.1311) | (0.1375) | (0.2591) | (0.1120) | (0.1395) | (0.1572) | (0.1966) | (0.1249) |
| Is Widowed | -0.2420 | -0.1875 | -0.1054 | 0.1622 | -0.1965 | -0.3172* | -0.1409 | -0.1135 |
| | (0.1583) | (0.2269) | (0.2570) | (0.5314) | (0.2505) | (0.1868) | (0.5170) | (0.1433) |
| Has Very Good Health | 0.3902*** | 0.3302*** | 0.3791*** | 0.3530*** | 0.3269*** | 0.3640*** | 0.2955*** | 0.3709*** |
| | (0.0439) | (0.0428) | (0.0608) | (0.0360) | (0.0388) | (0.0516) | (0.0559) | (0.0380) |
| Has Very Bad Health | -1.2092*** | -1.2487*** | -1.2014*** | -1.2775*** | -1.4018*** | -1.1130*** | -1.0498*** | -1.2161*** |
| | (0.0628) | (0.0727) | (0.0550) | (0.0982) | (0.0804) | (0.0627) | (0.1384) | (0.0509) |
| Is Disabled | -0.1371** | -0.1860*** | -0.1346** | -0.2693** | -0.0545 | -0.2069*** | 0.0046 | -0.1696*** |
| | (0.0640) | (0.0657) | (0.0521) | (0.1057) | (0.0709) | (0.0648) | (0.1553) | (0.0486) |
| Has Tertiary Degree | 0.0632 | -0.3300*** | -0.0843 | -0.1598** | -0.0330 | -0.2844** | -0.1133 | -0.1241 |
| | (0.1063) | (0.1075) | (0.2873) | (0.0804) | (0.1132) | (0.1212) | (0.1585) | (0.0918) |
| Has Lower Than Secondary Degree | -0.1715 | 0.1287 | -0.5888 | 0.0097 | 0.2526 | -0.2534* | -0.4628** | 0.1219 |
| | (0.1473) | (0.1425) | (0.3901) | (0.1064) | (0.1562) | (0.1524) | (0.2079) | (0.1264) |
| Is in Education | 0.1229 | 0.0748 | 0.4660 | 0.1776** | -0.0690 | 0.2910** | 0.4297** | 0.0980 |
| | (0.1190) | (0.1183) | (1.6600) | (0.0863) | (0.1265) | (0.1244) | (0.1926) | (0.0974) |
| Is Full-Time Employed | 0.0795 | -0.0118 | -0.0781 | 0.1999*** | -0.0141 | 0.1470** | 0.1555* | 0.0008 |
| | (0.0581) | (0.0611) | (0.0606) | (0.0602) | (0.0571) | (0.0668) | (0.0915) | (0.0487) |
| Is Part-Time Employed | -0.0004 | -0.0980 | -0.1424** | 0.1018* | 0.0270 | -0.0540 | 0.0984 | -0.1057** |
| | (0.0515) | (0.0824) | (0.0688) | (0.0563) | (0.0575) | (0.0676) | (0.0773) | (0.0527) |
| Is on Parental Leave | 0.2819*** | 0.5101* | 0.1691 | 0.3940*** | 0.3140*** | 0.2252** | 0.2488*** | 0.4985* |
| | (0.0709) | (0.2619) | (0.7798) | (0.0689) | (0.0885) | (0.1090) | (0.0814) | (0.2682) |
| Is Unemployed | -0.4709*** | -0.5913*** | -0.5109*** | -0.4424*** | -0.5167*** | -0.4967*** | -0.3871*** | -0.5927*** |
| | (0.0627) | (0.0649) | (0.0678) | (0.0623) | (0.0744) | (0.0626) | (0.0876) | (0.0540) |

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| Regressors | Satisfaction With Life (1) | (2) | (3) | (4) | (5) | (6) | (7) | (8) |
|---|---|---|---|---|---|---|---|---|
| Individual Income[a] | 0.0215 | 0.0705** | 0.0174 | 0.0766** | 0.0418 | 0.0449 | 0.0398 | 0.0461* |
| | (0.0282) | (0.0307) | (0.0272) | (0.0307) | (0.0282) | (0.0315) | (0.0398) | (0.0232) |
| Has Child in Household | -0.0455 | 0.0840 | 0.1539* | -0.0084 | 0.0200 | -0.0508 | | |
| | (0.0523) | (0.0521) | (0.0864) | (0.0447) | (0.0455) | (0.0704) | | |
| Household Income[a] | 0.1506*** | 0.1207*** | 0.1400*** | 0.1293*** | 0.0991* | 0.1126*** | 0.2090*** | 0.1143*** |
| | (0.0338) | (0.0353) | (0.0427) | (0.0302) | (0.0538) | (0.0389) | (0.0648) | (0.0274) |
| Lives in House[b] | 0.0205 | -0.0024 | -0.0016 | 0.0278 | 0.0249 | -0.0175 | 0.0096 | 0.0050 |
| | (0.0540) | (0.0491) | (0.0407) | (0.0497) | (0.0334) | (0.0502) | (0.0456) | (0.0359) |
| Lives in Small Apartment Building | 0.0158 | 0.0079 | 0.0171 | 0.0156 | 0.0122 | 0.0127 | 0.0450 | 0.0085 |
| | (0.0536) | (0.0469) | (0.0585) | (0.0451) | (0.0384) | (0.0555) | (0.0566) | (0.0437) |
| Lives in Large Apartment Building | -0.0000 | -0.0358 | -0.0174 | -0.0096 | 0.0095 | -0.0442 | 0.0001 | -0.0188 |
| | (0.0424) | (0.0361) | (0.0421) | (0.0322) | (0.0325) | (0.0467) | (0.0388) | (0.0396) |
| Lives in High Rise | 0.0114 | -0.0465 | 0.0079 | -0.0245 | -0.0413 | 0.0207 | -0.1345 | 0.0052 |
| | (0.0819) | (0.0685) | (0.0610) | (0.0754) | (0.0650) | (0.0664) | (0.0873) | (0.0503) |
| Number of Rooms per Individual | 0.0110 | 0.0205 | 0.0384 | -0.0199 | 0.0278 | 0.0044 | -0.1104** | 0.0267 |
| | (0.0328) | (0.0241) | (0.0309) | (0.0274) | (0.0274) | (0.0313) | (0.0490) | (0.0248) |
| Unemployment Rate | -0.0251*** | -0.0185*** | -0.0237*** | -0.0132* | -0.0096 | -0.0330*** | -0.0154 | -0.0271*** |
| | (0.0067) | (0.0070) | (0.0068) | (0.0072) | (0.0066) | (0.0075) | (0.0106) | (0.0056) |
| Average Household Income | 0.0001 | 0.0003 | 0.0006* | -0.0002 | -0.0001 | 0.0006* | 0.0001 | 0.0002 |
| | (0.0003) | (0.0003) | (0.0003) | (0.0003) | (0.0003) | (0.0004) | (0.0005) | (0.0003) |
| Constant | 6.8905*** | 7.3775*** | 4.3171*** | 6.8238*** | 7.8716*** | 6.8743*** | 7.3522*** | 6.6755*** |
| | (0.5256) | (0.5536) | (1.1226) | (0.5603) | (0.6762) | (0.6106) | (1.0055) | (0.4745) |
| Number of Observations | 17,886 | 15,896 | 16,524 | 17,258 | 17,153 | 16,629 | 8,226 | 25,556 |
| Number of Individuals | 3,647 | 3,312 | 3,248 | 4,309 | 4,392 | 4,271 | 2,170 | 5,702 |
| F-Statistic | 358.9500 | 634.7800 | 1,246.8500 | 187.3400 | 5,134.3200 | 478.0600 | 97.9100 | 314.3900 |
| $R^2$ | 0.0571 | 0.0627 | 0.0638 | 0.0545 | 0.0546 | 0.0624 | 0.0486 | 0.0614 |
| Adjusted $R^2$ | 0.0538 | 0.0590 | 0.0613 | 0.0510 | 0.0516 | 0.0588 | 0.0438 | 0.0591 |

[a] Annually in Euro/Inflation-Adjusted (Base Year 2000), [b] Detached, Semi-Detached, or Terraced

(1) Female Sub-Sample, (2) Male Sub-Sample, (3) Old-Age Sub-Sample, (4) Young-Age Sub-Sample,
(5) High-Income Sub-Sample, (6) Low-Income Sub-Sample, (7) Child Sub-Sample, (8) Non-Child Sub-Sample

*Robust standard errors in parentheses*
**** p<0.01, ** p<0.05, * p<0.1*

*Note:* The respective coverage is measured as the hectares covered by the area of interest in a pre-defined buffer area of 1,000 metres around households. All figures are rounded to four decimal places.

*Source:* SOEP 2000-2012, individuals aged 17 or above, own calculations

Table B.7: Results - Final Sample, Mental Health, FE Models, *Distances*

| | Mental Health | | | | |
|---|---|---|---|---|---|
| Regressors | (1) | (2) | (3) | (4) | (5) |
| Distance to Greens | 0.1064 | 0.0890 | 0.1174 | -0.0073 | 0.0004 |
| | (0.0792) | (0.0788) | (0.0810) | (0.0823) | (0.0836) |
| Distance to Forests | -0.0679** | -0.0708** | -0.0371 | 0.0099 | -0.0513 |
| | (0.0309) | (0.0307) | (0.0316) | (0.0321) | (0.0325) |
| Distance to Waters | -0.0086 | -0.0117 | -0.0131 | 0.0029 | 0.0446 |
| | (0.0408) | (0.0406) | (0.0417) | (0.0424) | (0.0430) |
| Distance to Abandoned Areas | 0.0279 | -0.0541 | 0.0243 | 0.2121*** | -0.0156 |
| | (0.0604) | (0.0601) | (0.0618) | (0.0628) | (0.0637) |
| Distance to Greens Squared | 0.0014 | 0.0003 | 0.0022 | 0.0027 | 0.0004 |
| | (0.0034) | (0.0034) | (0.0035) | (0.0035) | (0.0036) |
| Distance to Forests Squared | 0.0010** | 0.0012*** | 0.0004 | -0.0000 | 0.0008* |
| | (0.0004) | (0.0004) | (0.0004) | (0.0004) | (0.0004) |
| Distance to Waters Squared | 0.0006 | 0.0006 | 0.0004 | -0.0002 | -0.0004 |
| | (0.0011) | (0.0010) | (0.0011) | (0.0011) | (0.0011) |
| Distance to Abandoned Areas Squared | 0.0010 | 0.0033 | 0.0000 | -0.0055** | 0.0023 |
| | (0.0022) | (0.0021) | (0.0022) | (0.0022) | (0.0023) |
| Distance to City Centre | -0.0014 | -0.0165 | -0.0117 | 0.0429** | -0.0216 |
| | (0.0174) | (0.0173) | (0.0178) | (0.0180) | (0.0183) |
| Distance to City Periphery | -0.0303 | -0.0148 | 0.0088 | -0.0329 | -0.0141 |
| | (0.0261) | (0.0260) | (0.0267) | (0.0272) | (0.0276) |
| Distance to City Centre Squared | -0.0000 | 0.0000 | 0.0001 | -0.0002* | 0.0001 |
| | (0.0001) | (0.0001) | (0.0001) | (0.0001) | (0.0001) |
| Distance to City Periphery Squared | 0.0001 | -0.0001 | -0.0002 | 0.0004 | -0.0000 |
| | (0.0003) | (0.0003) | (0.0003) | (0.0003) | (0.0003) |
| Age | 0.2374*** | 0.1658** | 0.1023 | 0.1732** | 0.1599** |
| | (0.0744) | (0.0741) | (0.0760) | (0.0775) | (0.0785) |
| Age Squared | -0.0022*** | -0.0021*** | -0.0016** | -0.0034*** | -0.0033*** |
| | (0.0006) | (0.0006) | (0.0006) | (0.0006) | (0.0006) |
| Is Married | 0.4562 | 0.4370 | 0.3392 | 0.3373 | -0.4167 |
| | (0.3833) | (0.3813) | (0.3919) | (0.3984) | (0.4042) |
| Is Divorced | -0.3317 | -0.1028 | 0.1562 | -0.7194 | -1.2911** |
| | (0.5620) | (0.5589) | (0.5748) | (0.5843) | (0.5928) |
| Is Widowed | -2.7768*** | -3.4564*** | -1.8066** | -0.7540 | -0.8507 |
| | (0.7676) | (0.7632) | (0.7857) | (0.7979) | (0.8092) |
| Has Very Good Health | 0.6889*** | 1.4755*** | 0.9569*** | 0.8166*** | 1.3798*** |
| | (0.1748) | (0.1738) | (0.1787) | (0.1816) | (0.1844) |
| Has Very Bad Health | -3.6720*** | -3.6919*** | -3.7361*** | -4.7251*** | -3.2293*** |
| | (0.2726) | (0.2710 ) | (0.2787) | (0.2832) | (0.2871) |
| Is Disabled | -1.1440*** | -1.3490*** | -1.6884*** | -0.9007*** | -1.3192*** |
| | (0.2703) | (0.2686) | (0.2766) | (0.2810) | (0.2850) |
| Has Tertiary Degree | 1.4810*** | 1.3901*** | 1.2340*** | 0.4427 | 1.1672** |
| | (0.4362) | (0.4339) | (0.4459) | (0.4538) | (0.4597) |
| Has Lower Than Secondary Degree | -0.8908 | -1.3032** | -0.3069 | -0.1094 | -1.8464*** |
| | (0.6066) | (0.6019) | (0.6191) | (0.6294) | (0.6384) |
| Is in Education | -0.4264 | -0.4921 | 0.1663 | -0.1730 | -0.9711* |
| | (0.4910) | (0.4879) | (0.5017) | (0.5107) | (0.5180) |
| Is Full-Time Employed | -0.6616*** | -1.0747*** | 0.1640 | -0.3598 | -0.5713** |
| | (0.2492) | (0.2502) | (0.2420) | (0.2644) | (0.2608) |
| Is Part-Time Employed | -0.1103 | -0.2694 | 0.5372** | -0.2200 | -0.4148 |
| | (0.2410) | (0.2399) | (0.2424) | (0.2511) | (0.2538) |

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| Regressors | Mental Health (1) | (2) | (3) | (4) | (5) |
|---|---|---|---|---|---|
| Is on Parental Leave | 0.6220 | 0.4754 | 1.0907*** | 0.0560 | -0.4245 |
| | (0.3802) | (0.3781) | (0.3892) | (0.3960) | (0.4006) |
| Is Unemployed | -0.7272*** | -0.5750** | -0.4701* | -0.5987** | -0.4694* |
| | (0.2586) | (0.2581) | (0.2630) | (0.2722) | (0.2715) |
| Individual Income[a] | -0.0597 | -0.0144 | -0.0197 | -0.0904 | -0.0174 |
| | (0.1328) | (0.1379) | (0.1126) | (0.1520) | (0.1301) |
| Has Child in Household | 0.0155 | 0.2369 | 0.1578 | -0.3143 | 0.0316 |
| | (0.2243) | (0.2236) | (0.2292) | (0.2332) | (0.2363) |
| Household Income[a] | 0.1214 | 0.1006 | 0.2071 | 0.0528 | -0.0631 |
| | (0.1389) | (0.1393) | (0.1425) | (0.1455) | (0.1470) |
| Lives in House[b] | 0.0295 | -0.0270 | 0.1556 | -0.0070 | 0.0111 |
| | (0.2236) | (0.2311) | (0.1645) | (0.1690) | (0.2185) |
| Lives in Small Apartment Building | 0.1103 | 0.1609 | 0.0638 | 0.0294 | 0.0543 |
| | (0.2243) | (0.2201) | (0.2362) | (0.1759) | (0.2267) |
| Lives in Large Apartment Building | 0.0579 | 0.0134 | 0.1013 | 0.0999 | 0.0163 |
| | (0.1503) | (0.1221) | (0.1761) | (0.1467) | (0.1921) |
| Lives in High Rise | 0.0374 | -0.0516 | -0.0527 | 0.1039 | 0.2351 |
| | (0.4149) | (0.4047) | (0.3451) | (0.4165) | (0.2997) |
| Number of Rooms per Individual | -0.0036 | 0.05897 | 0.0487 | -0.1844 | 0.1844 |
| | (0.1174) | (0.1176) | (0.1199) | (0.1219) | (0.1236) |
| Unemployment Rate | 0.0301 | -0.0203 | 0.0367 | 0.0336 | 0.0480 |
| | (0.0278) | (0.0277) | (0.0285) | (0.0289) | (0.0293) |
| Average Household Income | -0.0004 | -0.0006 | 0.0019 | 0.0027* | 0.0002 |
| | (0.0014) | (0.0014) | (0.0014) | (0.0015) | (0.0015) |
| Constant | 43.0761*** | 49.8542*** | 41.6980*** | 41.5054*** | 52.8272 |
| | (2.9493) | (2.9248) | (3.0142) | (3.0648) | (3.0984) |
| Number of Observations | 24,389 | 24,391 | 24,391 | 24,391 | 24,391 |
| Number of Individuals | 5,510 | 5,510 | 5,510 | 5,510 | 5,510 |
| F-Statistic | 1,737.6900 | 797.8900 | 2,034.0400 | 2,270.5200 | 247.5800 |
| $R^2$ | 0.0250 | 0.0298 | 0.0240 | 0.0283 | 0.0254 |
| Adjusted $R^2$ | 0.0222 | 0.0270 | 0.0212 | 0.0255 | 0.0227 |

[a] Annually in Euro/Inflation-Adjusted (Base Year 2000), [b] Detached, Semi-Detached, or Terraced

(1) Mental Health Summary Scale, (2) Mental Health in General,
(3) Role-Emotional Functioning, (4) Social Functioning, (5) Vitality

*Robust standard errors in parentheses*
**** p<0.01, ** p<0.05, * p<0.1*

*Note:* The respective distance is measured as the Euclidean distance in 100 metres between households and the border of the nearest area of interest. All figures are rounded to four decimal places.

*Source:* SOEP 2000-2012, individuals aged 17 or above, own calculations

Table B.8: Results - Final Sample, Mental Health, FE Models, *Coverages*

| | Mental Health | | | | |
|---|---|---|---|---|---|
| Regressors | (1) | (2) | (3) | (4) | (5) |
| Coverage of Greens | 0.0159 | 0.0071 | -0.0028 | 0.0366** | 0.0291* |
| | (0.0148) | (0.0147) | (0.0151) | (0.0154) | (0.0156) |
| Coverage of Forests | 0.0166 | 0.0254** | -0.0026 | 0.0232* | 0.0125 |
| | (0.0125) | (0.0124) | (0.0128) | (0.0130) | (0.0132) |
| Coverage of Waters | 0.0058 | -0.0159 | 0.0239 | 0.0242 | 0.0007 |
| | (0.0189) | (0.0188) | (0.0193) | (0.0196) | (0.0199) |
| Coverage of Abandoned Areas | -0.3885*** | -0.2661*** | -0.2092** | -0.4867*** | -0.1641* |
| | (0.0882) | (0.0877) | (0.0902) | (0.0916) | (0.0930) |
| Coverage of Greens Squared | -0.0003* | -0.0001 | -0.0001 | -0.0005*** | -0.0002 |
| | (0.0001) | (0.0001) | (0.0001) | (0.0001) | (0.0001) |
| Coverage of Forests Squared | -0.0001 | -0.0001 | 0.0000 | -0.0001 | -0.0000 |
| | (0.0001) | (0.0001) | (0.0001) | (0.0001) | (0.0001) |
| Coverage of Waters Squared | -0.0001 | 0.0003 | -0.0001 | -0.0003 | -0.0003 |
| | (0.0002) | (0.0002) | (0.0002) | (0.0002) | (0.0002) |
| Coverage of Abandoned Areas Squared | 0.0166*** | 0.0092** | 0.0086* | 0.0235*** | 0.0073 |
| | (0.0047) | (0.0047) | (0.0048) | (0.0049) | (0.0050) |
| Age | 0.2399*** | 0.1642** | 0.0984 | 0.1727** | 0.1681** |
| | (0.0742) | (0.0739) | (0.0759) | (0.0773) | (0.0783) |
| Age Squared | -0.0022*** | -0.0021*** | -0.0016** | -0.0034*** | -0.0034*** |
| | (0.0006) | (0.0006) | (0.0006) | (0.0006) | (0.0006) |
| Is Married | 0.4428 | 0.4045 | 0.3175 | 0.3425 | -0.4350 |
| | (0.3828) | (0.3808) | (0.3915) | (0.3976) | (0.4036) |
| Is Divorced | -0.2965 | -0.1026 | 0.1521 | -0.6579 | -1.2735** |
| | (0.5620) | (0.5590) | (0.5749) | (0.5839) | (0.5928) |
| Is Widowed | -2.7533*** | -3.4557*** | -1.8248** | -0.7056 | -0.7985 |
| | (0.7669) | (0.7627) | (0.7851) | (0.7967) | (0.8084) |
| Has Very Good Health | 0.6747*** | 1.4653*** | 0.9377*** | 0.8044*** | 1.3837*** |
| | (0.1749) | (0.1739) | (0.1788) | (0.1815) | (0.1844) |
| Has Very Bad Health | -3.6645*** | -3.6825*** | -3.7322*** | -4.7255*** | -3.2241*** |
| | (0.2726) | (0.2710) | (0.2787) | (0.2830) | (0.2871) |
| Is Disabled | -1.1566*** | -1.3557*** | -1.6868*** | -0.9204*** | -1.3285*** |
| | (0.2703) | (0.2686) | (0.2765) | (0.2807) | (0.2849) |
| Has Tertiary Degree | 1.4150*** | 1.3613*** | 1.1549*** | 0.4250 | 1.1261** |
| | (0.4354) | (0.4331) | (0.4451) | (0.4526) | (0.4588) |
| Has Lower Than Secondary Degree | -0.9378 | -1.3270** | -0.3730 | -0.1113 | -1.8663*** |
| | (0.6063) | (0.6018) | (0.6190) | (0.6287) | (0.6381) |
| Is in Education | -0.4578 | -0.5387 | 0.1619 | -0.1842 | -0.9944* |
| | (0.4906) | (0.4876) | (0.5014) | (0.5100) | (0.5176) |
| Is Full-Time Employed | -0.6791*** | -1.0778*** | 0.1438 | -0.3746 | -0.5967** |
| | (0.2486) | (0.2497) | (0.2418) | (0.2637) | (0.2604) |
| Is Part-Time Employed | -0.1385 | -0.2864 | 0.5140** | -0.2466 | -0.4432* |
| | (0.2408) | (0.2398) | (0.2424) | (0.2507) | (0.2537) |
| Is on Parental Leave | 0.6027 | 0.4729 | 1.0540*** | -0.0140 | -0.4055 |
| | (0.3805) | (0.3785) | (0.3896) | (0.3961) | (0.4009) |
| Is Unemployed | -0.7406*** | -0.5895** | -0.4818* | -0.6162** | -0.4699* |
| | (0.2585) | (0.2580) | (0.2632) | (0.2720) | (0.2715) |
| Individual Income[a] | -0.0598 | -0.0176 | -0.0148 | -0.0933 | -0.0164 |
| | (0.1317) | (0.1370) | (0.1125) | (0.1511) | (0.1299) |
| Has Child in Household | 0.0167 | 0.2293 | 0.1693 | -0.3375 | 0.0722 |
| | (0.2244) | (0.2238) | (0.2293) | (0.2331) | (0.2363) |

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| Regressors | Mental Health (1) | (2) | (3) | (4) | (5) |
|---|---|---|---|---|---|
| Household Income[a] | 0.1398 | 0.1125 | 0.2262 | 0.0554 | -0.0298 |
| | (0.1385) | (0.1390) | (0.1422) | (0.1452) | (0.1466) |
| Lives in House[b] | 0.0391 | -0.0216 | 0.1634 | -0.0045 | 0.0137 |
| | (0.2258) | (0.2327) | (0.1658) | (0.1676) | (0.2185) |
| Lives in Small Apartment Building | 0.1146 | 0.1634 | 0.0645 | 0.0352 | 0.0577 |
| | (0.2262) | (0.2218) | (0.2366) | (0.1776) | (0.2266) |
| Lives in Large Apartment Building | 0.0574 | 0.0152 | 0.0985 | 0.0967 | 0.0165 |
| | (0.1517) | (0.1228) | (0.1770) | (0.1463) | (0.1927) |
| Lives in High Rise | 0.0452 | -0.0427 | -0.0442 | 0.1050 | 0.2295 |
| | (0.4161) | (0.4052) | (0.3452) | (0.4158) | (0.2979) |
| Number of Rooms per Individual | 0.0117 | 0.0644 | 0.0594 | -0.1651 | 0.1975 |
| | (0.1173) | (0.1177) | (0.1197) | (0.1217) | (0.1235) |
| Unemployment Rate | 0.0296 | -0.0210 | 0.0345 | 0.0339 | 0.0475 |
| | (0.0278) | (0.0277) | (0.0285) | (0.0289) | (0.0293) |
| Average Household Income | -0.0003 | -0.0005 | 0.0020 | 0.0028* | 0.0002 |
| | (0.0014) | (0.0014) | (0.0014) | (0.0014) | (0.0015) |
| Constant | 41.6706*** | 47.7226*** | 40.9261*** | 44.9021*** | 50.6260*** |
| | (2.4580) | (2.4375) | (2.5106) | (2.5519) | (2.5780) |
| Number of Observations | 24,389 | 24,391 | 24,391 | 24,391 | 24,391 |
| Number of Individuals | 5,510 | 5,510 | 5,510 | 5,510 | 5,510 |
| F-Statistic | 1,779.8700 | 838.3400 | 2,146.7100 | 2,396.1200 | 258.4200 |
| $R^2$ | 0.0249 | 0.0295 | 0.0236 | 0.0294 | 0.0255 |
| Adjusted $R^2$ | 0.0224 | 0.0269 | 0.0210 | 0.0269 | 0.0230 |

[a] Annually in Euro/Inflation-Adjusted (Base Year 2000), [b] Detached, Semi-Detached, or Terraced

(1) Mental Health Summary Scale, (2) Mental Health in General,
(3) Role-Emotional Functioning, (4) Social Functioning, (5) Vitality

*Robust standard errors in parentheses*
**** p<0.01, ** p<0.05, * p<0.1*

*Note:* The respective coverage is measured as the hectares covered by the area of interest in a pre-defined buffer area of 1,000 metres around households. All figures are rounded to four decimal places.

*Source:* SOEP 2000-2012, individuals aged 17 or above, own calculations

Table B.9: Results - Final Sample, Physical Health, FE Models, *Distances*

| | Physical Health | | | | |
|---|---|---|---|---|---|
| Regressors | (1) | (2) | (3) | (4) | (5) |
| Distance to Greens | -0.0757 | -0.0484 | -0.0036 | -0.0653 | -0.0616*** |
| | (0.0600) | (0.0750) | (0.0746) | (0.0627) | (0.0164) |
| Distance to Forests | 0.0349 | -0.0001 | -0.0197 | 0.0523** | -0.0132** |
| | (0.0234) | (0.0292) | (0.0290) | (0.0244) | (0.0063) |
| Distance to Waters | 0.0485 | 0.0280 | 0.0509 | -0.0096 | 0.0021 |
| | (0.0308) | (0.0385) | (0.0383) | (0.0322) | (0.0084) |
| Distance to Abandoned Areas | 0.0156 | -0.0460 | -0.0639 | 0.1310*** | -0.0106 |
| | (0.0456) | (0.0570) | (0.0567) | (0.0476) | (0.0125) |
| Distance to Greens Squared | 0.0008 | 0.0011 | 0.0012 | 0.0022 | 0.0023*** |
| | (0.0026) | (0.0032) | (0.0032) | (0.0027) | (0.0007) |
| Distance to Forests Squared | -0.0005* | -0.0000 | 0.0001 | -0.0005* | 0.0001 |
| | (0.0003) | (0.0004) | (0.0004) | (0.0003) | (0.0001) |
| Distance to Waters Squared | -0.0015* | -0.0011 | -0.0013 | -0.0001 | 0.0002 |
| | (0.0008) | (0.0010) | (0.0010) | (0.0008) | (0.0002) |
| Distance to Abandoned Areas Squared | -0.0007 | 0.0017 | 0.0031 | -0.0044*** | 0.0005 |
| | (0.0016) | (0.0020) | (0.0020) | (0.0017) | (0.0004) |
| Distance to City Centre | -0.0057 | -0.0114 | 0.0027 | 0.0093 | 0.0020 |
| | (0.0131) | (0.0164) | (0.0163) | (0.0137) | (0.0036) |
| Distance to City Periphery | 0.0330* | 0.0596** | -0.0005 | 0.0345* | 0.0016 |
| | (0.0198) | (0.0247) | (0.0246) | (0.0207) | (0.0054) |
| Distance to City Centre Squared | 0.0001* | 0.0002* | 0.0000 | 0.0001 | -0.0000 |
| | (0.0001) | (0.0001) | (0.0001) | (0.0001) | (0.0000) |
| Distance to City Periphery Squared | -0.0002 | -0.0004* | 0.0002 | -0.0003 | 0.0001 |
| | (0.0002) | (0.0002) | (0.0002) | (0.0002) | (0.0001) |
| Age | -0.0809 | -0.0894 | 0.1629** | -0.0051 | 0.3568*** |
| | (0.0567) | (0.0708) | (0.0703) | (0.0590) | (0.0153) |
| Age Squared | -0.0032*** | -0.0018*** | -0.0036*** | -0.0047*** | -0.0022*** |
| | (0.0005) | (0.0006) | (0.0006) | (0.0005) | (0.0001) |
| Is Married | -0.4054 | -0.0875 | -0.2917 | -0.5361* | 0.1826** |
| | (0.2890) | (0.3611) | (0.3591) | (0.3018) | (0.0792) |
| Is Divorced | -0.4003 | -0.3123 | 0.1113 | -0.6768 | 0.3055*** |
| | (0.4256) | (0.5317) | (0.5291) | (0.4446) | (0.1159) |
| Is Widowed | 0.7888 | -0.9545 | -0.5725 | -0.0116 | 0.7260*** |
| | (0.5823) | (0.7277) | (0.7239) | (0.6083) | (0.1569) |
| Has Very Good Health | 2.7767*** | 1.1459*** | 1.3418*** | 0.8816*** | -0.1534*** |
| | (0.1323) | (0.1652) | (0.1644) | (0.1381) | (0.0361) |
| Has Very Bad Health | -4.6105*** | -3.9816*** | -4.1242*** | -2.8349*** | -0.0187 |
| | (0.2072) | (0.2592) | (0.2576) | (0.2164) | (0.0558) |
| Is Disabled | -1.6948*** | -1.6371*** | -1.5502*** | -2.1676*** | 0.1307** |
| | (0.2056) | (0.2568) | (0.2559) | (0.2147) | (0.0554) |
| Has Tertiary Degree | -0.4218 | 0.2908 | -0.5731 | 0.5556 | -0.1609* |
| | (0.3313) | (0.4133) | (0.4111) | (0.3454) | (0.0911) |
| Has Lower Than Secondary Degree | -0.1804 | -0.4629 | -0.6920 | -0.6780 | -0.0827 |
| | (0.4598) | (0.5744) | (0.5718) | (0.4804) | (0.1264) |
| Is in Education | 0.6090 | 0.7714* | 1.4554*** | -0.3288 | 0.0786 |
| | (0.3730) | (0.4664) | (0.4636) | (0.3889) | (0.1009) |
| Is Full-Time Employed | 0.1723 | -0.3025 | 0.2937 | -0.1519 | -0.0244 |
| | (0.2025) | (0.2496) | (0.2424) | (0.1997) | (0.0506) |
| Is Part-Time Employed | 0.1255 | -0.2153 | 0.3868* | 0.0150 | -0.0785 |
| | (0.1865) | (0.2312) | (0.2289) | (0.1913) | (0.0496) |

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| | Physical Health | | | | |
|---|---|---|---|---|---|
| Regressors | (1) | (2) | (3) | (4) | (5) |
| Is on Parental Leave | -0.2075 | 0.4756 | 0.3354 | -0.5379* | 0.4378*** |
| | (0.2894) | (0.3616) | (0.3599) | (0.3018) | (0.0785) |
| Is Unemployed | 0.1095 | 0.3442 | 0.0444 | -0.4330** | 0.0287 |
| | (0.2036) | (0.2520) | (0.2501) | (0.2081) | (0.0536) |
| Individual Income[a] | 0.0263 | 0.0764 | -0.0629 | 0.0490 | -0.0057 |
| | (0.1276) | (0.1527) | (0.1457) | (0.1132) | (0.0270) |
| Has Child in Household | -0.0318 | -0.1355 | -0.4218** | 0.3994** | -0.0216 |
| | (0.1702) | (0.2127) | (0.2114) | (0.1776) | (0.0464) |
| Household Income[a] | -0.0109 | -0.0689 | 0.0726 | 0.0275 | 0.0752*** |
| | (0.1058) | (0.1319) | (0.1328) | (0.1102) | (0.0290) |
| Lives in House[b] | 0.0630 | 0.0836 | 0.0557 | 0.0077 | 0.0319 |
| | (0.1181) | (0.1533) | (0.1758) | (0.1119) | (0.0372) |
| Lives in Small Apartment Building | -0.0108 | -0.0610 | -0.0269 | 0.0611 | 0.0340 |
| | (0.1327) | (0.1806) | (0.1849) | (0.1295) | (0.0344) |
| Lives in Large Apartment Building | 0.0713 | 0.0291 | 0.1034 | 0.0686 | 0.0085 |
| | (0.0937) | (0.1048) | (0.1472) | (0.0943) | (0.0388) |
| Lives in High Rise | 0.0496 | 0.1677 | -0.0291 | -0.0585 | 0.0260 |
| | (0.2034) | (0.3949) | (0.2758) | (0.2097) | (0.0523) |
| Number of Rooms per Individual | 0.1226 | 0.1711 | 0.0605 | 0.0508 | -0.0282 |
| | (0.0877) | (0.1094) | (0.1096) | (0.0915) | (0.0240) |
| Unemployment Rate | 0.0229 | 0.0552** | 0.1162*** | -0.0497** | 0.0089 |
| | (0.0211) | (0.0263) | (0.0263) | (0.0220) | (0.0057) |
| Average Household Income | 0.0045*** | 0.0037*** | 0.0021 | 0.0066*** | -0.0007** |
| | (0.0011) | (0.0013) | (0.0013) | (0.0011) | (0.0003) |
| Constant | 54.1710*** | 52.1199*** | 43.6738*** | 52.0289*** | 13.1646*** |
| | (2.2290) | (2.7771) | (2.7603) | (2.3234) | (0.6061) |
| Number of Observations | 24,542 | 24,542 | 24,542 | 24,542 | 25,527 |
| Number of Individuals | 5,556 | 5,556 | 5,556 | 5,556 | 5,615 |
| F-Statistic | 335.0100 | 678.8300 | 1,791.1800 | 396.5800 | 347.3900 |
| $R^2$ | 0.0909 | 0.0315 | 0.0363 | 0.0581 | 0.0700 |
| Adjusted $R^2$ | 0.0883 | 0.0288 | 0.0336 | 0.0555 | 0.0675 |

[a] Annually in Euro/Inflation-Adjusted (Base Year 2000), [b] Detached, Semi-Detached, or Terraced

(1) Physical Health Summary Scale, (2) Bodily Pain,
(3) Role-Physical Functioning, (4) Physical Functioning, (5) Body-Mass Index

*Robust standard errors in parentheses*
**** p<0.01, ** p<0.05, * p<0.1*

*Note:* The respective distance is measured as the Euclidean distance in 100 metres between households and the border of the nearest area of interest. All figures are rounded to four decimal places.

*Source:* SOEP 2000-2012, individuals aged 17 or above, own calculations

Table B.10: Results - Final Sample, Physical Health, FE Models, *Coverages*

| | Physical Health | | | | |
|---|---|---|---|---|---|
| Regressors | (1) | (2) | (3) | (4) | (5) |
| Coverage of Greens | 0.0120 | 0.0324** | 0.0112 | 0.0091 | 0.0023 |
| | (0.0112) | (0.0140) | (0.0139) | (0.0117) | (0.0031) |
| Coverage of Forests | 0.0095 | 0.0174 | 0.0075 | 0.0135 | -0.0051** |
| | (0.0094) | (0.0118) | (0.0117) | (0.0098) | (0.0026) |
| Coverage of Waters | 0.0062 | -0.0124 | 0.0076 | 0.0121 | -0.0068* |
| | (0.0143) | (0.0178) | (0.0178) | (0.0149) | (0.0039) |
| Coverage of Abandoned Areas | 0.0944 | 0.0842 | 0.0382 | -0.1389** | 0.0464** |
| | (0.0666) | (0.0832) | (0.0828) | (0.0696) | (0.0183) |
| Coverage of Greens Squared | 0.0000 | -0.0001 | -0.0001 | -0.0000 | -0.0000 |
| | (0.0001) | (0.0001) | (0.0001) | (0.0001) | (0.0000) |
| Coverage of Forests Squared | -0.0001 | -0.0001 | -0.0001 | -0.0001 | 0.0000** |
| | (0.0001) | (0.0001) | (0.0001) | (0.0001) | (0.0000) |
| Coverage of Waters Squared | -0.0001 | 0.0002 | -0.0002 | -0.0001 | -0.0000 |
| | (0.0002) | (0.0002) | (0.0002) | (0.0002) | (0.0000) |
| Coverage of Abandoned Areas Squared | -0.0044 | -0.0043 | -0.0011 | 0.0079** | -0.0029*** |
| | (0.0036) | (0.0045) | (0.0044) | (0.0037) | (0.0010) |
| Age | -0.0869 | -0.0931 | 0.1664** | -0.0140 | 0.3583*** |
| | (0.0565) | (0.0706) | (0.0701) | (0.0589) | (0.0153) |
| Age Squared | -0.0032*** | -0.0017*** | -0.0037*** | -0.0046*** | -0.0022*** |
| | (0.0005) | (0.0006) | (0.0006) | (0.0005) | (0.0001) |
| Is Married | -0.4343 | -0.1496 | -0.3004 | -0.5568* | 0.1751** |
| | (0.2887) | (0.3606) | (0.3587) | (0.3015) | (0.0791) |
| Is Divorced | -0.4500 | -0.3981 | 0.0732 | -0.6681 | 0.2883** |
| | (0.4257) | (0.5316) | (0.5291) | (0.4447) | (0.1159) |
| Is Widowed | 0.7755 | -0.9867 | -0.5943 | -0.0028 | 0.7155*** |
| | (0.5819) | (0.7269) | (0.7234) | (0.6080) | (0.1568) |
| Has Very Good Health | 20.7784*** | 1.1461*** | 1.3419*** | 0.8794*** | -0.1481*** |
| | (0.1323) | (0.1652) | (0.1645) | (0.1382) | (0.0361) |
| Has Very Bad Health | -4.6137*** | -3.9768*** | -4.1263*** | -2.8335*** | -0.0184 |
| | (0.2073) | (0.2591) | (0.2576) | (0.2165) | (0.0558) |
| Is Disabled | -1.6918*** | -1.6321*** | -1.5617*** | -2.1597*** | 0.1308** |
| | (0.2055) | (0.2566) | (0.2559) | (0.2147) | (0.0554) |
| Has Tertiary Degree | -0.3993 | 0.2820 | -0.5874 | 0.5776* | -0.1567* |
| | (0.3306) | (0.4124) | (0.4103) | (0.3447) | (0.0909) |
| Has Lower Than Secondary Degree | -0.1633 | -0.4472 | -0.7075 | -0.6623 | -0.0814 |
| | (0.4597) | (0.5741) | (0.5716) | (0.4803) | (0.1264) |
| Is in Education | 0.6141 | 0.7566 | 1.4715*** | -0.3377 | 0.0975 |
| | (0.3728) | (0.4660) | (0.4633) | (0.3887) | (0.1008) |
| Is Full-Time Employed | 0.1685 | -0.3021 | 0.2801 | -0.1562 | -0.0243 |
| | (0.2031) | (0.2501) | (0.2432) | (0.2002) | (0.0504) |
| Is Part-Time Employed | 0.1215 | -0.2161 | 0.3771 | 0.0013 | -0.0714 |
| | (0.1867) | (0.2314) | (0.2291) | (0.1916) | (0.0495) |
| Is on Parental Leave | -0.2367 | 0.4339 | 0.3227 | -0.5768* | 0.4522*** |
| | (0.2897) | (0.3619) | (0.3604) | (0.3022) | (0.0786) |
| Is Unemployed | 0.1066 | 0.3346 | 0.0423 | -0.4464** | 0.0328 |
| | (0.2039) | (0.2522) | (0.2506) | (0.2084) | (0.0536) |
| Individual Income[a] | 0.0265 | 0.0738 | -0.0604 | 0.0481 | -0.0051 |
| | (0.1288) | (0.1538) | (0.1474) | (0.1144) | (0.0266) |
| Has Child in Household | -0.0217 | -0.1336 | -0.4047* | 0.3962** | -0.0129 |
| | (0.1702) | (0.2127) | (0.2115) | (0.1776) | (0.0464) |

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| | Physical Health | | | | |
|---|---|---|---|---|---|
| Regressors | (1) | (2) | (3) | (4) | (5) |
| Household Income[a] | -0.0059 | -0.0549 | 0.0743 | 0.0375 | 0.0758*** |
| | (0.1057) | (0.1316) | (0.1326) | (0.1100) | (0.0288) |
| Lives in House[b] | 0.0542 | 0.0776 | 0.0544 | 0.0021 | 0.0304 |
| | (0.1198) | (0.1535) | (0.1767) | (0.1118) | (0.0374) |
| Lives in Small Apartment Building | -0.0120 | -0.0634 | -0.0256 | 0.0619 | 0.0325 |
| | (0.1348) | (0.1816) | (0.1841) | (0.1305) | (0.0343) |
| Lives in Large Apartment Building | 0.0692 | 0.0288 | 0.1022 | 0.0661 | 0.0081 |
| | (0.0933) | (0.1046) | (0.1468) | (0.0942) | (0.0384) |
| Lives in High Rise | 0.0418 | 0.1610 | -0.0368 | -0.0568 | 0.0224 |
| | (0.2033) | (0.3915) | (0.2759) | (0.2098) | (0.0524) |
| Number of Rooms per Individual | 0.1221 | 0.1669 | 0.0665 | 0.0519 | -0.0292 |
| | (0.0877) | (0.1093) | (0.1095) | (0.0915) | (0.0240) |
| Unemployment Rate | 0.0214 | 0.0530** | 0.1154*** | -0.0512** | 0.0091 |
| | (0.0211) | (0.0263) | (0.0263) | (0.0220) | (0.0057) |
| Average Household Income | 0.0045*** | 0.0037*** | 0.0022 | 0.0066*** | -0.0007** |
| | (0.0011) | (0.0013) | (0.0013) | (0.0011) | (0.0003) |
| Constant | 56.0114*** | 53.1314*** | 44.4040*** | 54.7648*** | 13.2096*** |
| | (1.8598) | (2.3152) | (2.2971) | (1.9355) | (0.5025) |
| Number of Observations | 24,542 | 24,542 | 24,542 | 24,542 | 25,527 |
| Number of Individuals | 5,556 | 5,556 | 5,556 | 5,556 | 5,615 |
| F-Statistic | 352.1400 | 700.9800 | 1,889.1800 | 419.4400 | 367.5800 |
| $R^2$ | 0.0904 | 0.0318 | 0.0359 | 0.0575 | 0.0695 |
| Adjusted $R^2$ | 0.0881 | 0.0292 | 0.0334 | 0.0550 | 0.0671 |

[a] Annually in Euro/Inflation-Adjusted (Base Year 2000), [b] Detached, Semi-Detached, or Terraced

(1) Physical Health Summary Scale, (2) Bodily Pain,
(3) Role-Physical Functioning, (4) Physical Functioning, (5) Body-Mass Index

*Robust standard errors in parentheses*
**** p<0.01, ** p<0.05, * p<0.1*

*Note:* The respective coverage is measured as the hectares covered by the area of interest in a pre-defined buffer area of 1,000 metres around households. All figures are rounded to four decimal places.

*Source:* SOEP 2000-2012, individuals aged 17 or above, own calculations

Table B.11: Results - Final Sample, Satisfaction With Life, OLS Models, *Access*

| | Satisfaction With Life | |
|---|---|---|
| Regressors | OLS | OLS |
| Access to Greens Below 10 Minutes | 0.9399*** | 1.1382*** |
| | (0.2708) | (0.3042) |
| Access to Greens Between 10 to 20 Minutes | 0.7451*** | 1.0349*** |
| | (0.2746) | (0.3090) |
| Access to Greens Above 20 Minutes | 0.7226** | 0.6822** |
| | (0.2860) | (0.3275) |
| Age | | -0.0199 |
| | | (0.0191) |
| Age Squared | | 0.0003* |
| | | (0.0002) |
| Is Female | | 0.1705** |
| | | (0.0688) |
| Is Married | | 0.0978 |
| | | (0.1206) |
| Is Divorced | | 0.0801 |
| | | (0.1308) |
| Is Widowed | | 0.2592 |
| | | (0.1796) |
| Has Very Good Health | | 1.0596*** |
| | | (0.1049) |
| Has Very Bad Health | | -2.8643*** |
| | | (0.2398) |
| Is Disabled | | 0.4329*** |
| | | (0.0828) |
| Has Migration Background | | -0.1667 |
| | | (0.2012) |
| Has Tertiary Degree | | -0.2704*** |
| | | (0.0692) |
| Has Lower Than Secondary Degree | | -0.1017 |
| | | (0.1313) |
| Is in Education | | 0.1775 |
| | | (0.1446) |
| Is Full-Time Employed | | -0.1850 |
| | | (0.1298) |
| Is Part-Time Employed | | -0.2268* |
| | | (0.1330) |
| Is on Parental Leave | | -0.8134 |
| | | (0.7535) |
| Is Unemployed | | -0.6033** |
| | | (0.2684) |
| Individual Income[a] | | 0.1580** |
| | | (0.0625) |
| Has Child in Household | | 0.1728 |
| | | (0.1618) |
| Household Income[a] | | 0.6865*** |
| | | (0.0792) |
| Lives in House[b] | | 0.0709 |
| | | (0.0975) |
| Lives in Small Apartment Building | | 0.1324 |
| | | (0.2135) |

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| Regressors | Satisfaction With Life<br>OLS | <br>OLS |
|---|---|---|
| Lives in Large Apartment Building | | -0.0839 |
| | | (0.0762) |
| Lives in High Rise | | 0.0050 |
| | | (0.1160) |
| Number of Rooms per Individual | | -0.0143 |
| | | (0.0328) |
| Constant | 6.5773*** | -0.7972 |
| | (0.2686) | (0.8121) |
| Number of Observations | 3,265 | 2,783 |
| F-Statistic | 18.9300 | 21.2200 |
| $R^2$ | 0.0010 | 0.1774 |
| Adjusted $R^2$ | 0.0077 | 0.1691 |

[a] Annually in Euro/Inflation-Adjusted (Base Year 2009), [b] Detached, Semi-Detached, or Terraced

*Robust standard errors in parentheses*
**** p<0.01, ** p<0.05, * p<0.1*

*Note:* All figures are rounded to four decimal places.

*Source:* BASE-II 2009-2012, individuals aged 17 or above, own calculations

Table B.12: Results - Final Sample, Medical Condition, OLS Models, *Access*

| | Medical Condition | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| Regressors | (1) | (2) | (3) | (4) | (5) | (6) | (7) | (8) |
| Access to Greens Below 10 Minutes | -0.0892 | -0.0941* | -0.0299 | -0.1380*** | -0.0228 | -0.1475** | -0.0999* | -0.1052*** |
| | (0.0816) | (0.0568) | (0.0232) | (0.0499) | (0.0519) | (0.0626) | (0.0519) | (0.0400) |
| Access to Greens Between 10 to 20 Minutes | -0.0579 | -0.1195** | -0.0459* | -0.1403*** | -0.0106 | -0.1112* | -0.0793 | -0.1011** |
| | (0.0829) | (0.0577) | (0.0235) | (0.0507) | (0.0527) | (0.0636) | (0.0527) | (0.0406) |
| Access to Greens Above 20 Minutes | -0.0256 | -0.1246** | -0.0307 | -0.1034* | -0.0154 | -0.0648 | -0.0374 | -0.0661 |
| | (0.0878) | (0.0612) | (0.0250) | (0.0537) | (0.0559) | (0.0674) | (0.0559) | (0.0431) |
| Age | 0.0015 | -0.0204*** | -0.0099*** | 0.0006 | -0.0013 | -0.0128*** | -0.0035 | 0.0006 |
| | (0.0051) | (0.0036) | (0.0015) | (0.0031) | (0.0033) | (0.0039) | (0.0033) | (0.0025) |
| Age Squared | 0.0001 | 0.0002*** | 0.0001*** | 0.0000 | 0.0000 | 0.0002*** | 0.0001* | 0.0000 |
| | (0.0000) | (0.0000) | (0.0000) | (0.0000) | (0.0000) | (0.0000) | (0.0000) | (0.0000) |
| Is Female | -0.0425** | -0.0310** | -0.0153*** | -0.0522*** | 0.0232** | 0.0701*** | 0.0035 | 0.0127 |
| | (0.0184) | (0.0128) | (0.0052) | (0.0113) | (0.0117) | (0.0141) | (0.0117) | (0.0090) |
| Is Married | 0.0462 | 0.0341 | -0.0061 | 0.0454** | 0.0279 | 0.0167 | 0.0014 | -0.0280* |
| | (0.0323) | (0.0225) | (0.0092) | (0.0197) | (0.0205) | (0.0248) | (0.0205) | (0.0158) |
| Is Divorced | 0.0064 | 0.0109 | -0.0054 | 0.0007 | 0.0090 | 0.0015 | 0.0066 | -0.0175 |
| | (0.0350) | (0.0244) | (0.0100) | (0.0214) | (0.0223) | (0.0269) | (0.0223) | (0.0172) |
| Is Widowed | 0.0413 | -0.0390 | -0.0345** | 0.0316 | 0.0628** | 0.0211 | 0.0432 | -0.0585** |
| | (0.0481) | (0.0335) | (0.0137) | (0.0295) | (0.0306) | (0.0369) | (0.0306) | (0.0236) |
| Has Very Good Health | -0.1749*** | -0.0737*** | -0.0028 | -0.0470*** | -0.0285 | -0.0633*** | -0.0527*** | -0.0214 |
| | (0.0281) | (0.0196) | (0.0080) | (0.0172) | (0.0179) | (0.0215) | (0.0179) | (0.0138) |
| Has Very Bad Health | 0.0631 | 0.0561 | 0.1265*** | 0.0280 | 0.1337*** | 0.0479 | 0.0809** | 0.0787** |
| | (0.0643) | (0.0448) | (0.0183) | (0.0394) | (0.0409) | (0.0494) | (0.0409) | (0.0315) |
| Is Disabled | -0.0172 | -0.0714*** | -0.0388*** | -0.1104*** | -0.2421*** | -0.1356*** | -0.1164*** | -0.0417*** |
| | (0.0222) | (0.0154) | (0.0063) | (0.0136) | (0.0141) | (0.0170) | (0.0141) | (0.0109) |
| Has Migration Background | 0.0209 | 0.0382 | 0.0248 | 0.0276 | -0.0443 | -0.0121 | -0.0360 | 0.0113 |
| | (0.0539) | (0.0376) | (0.0153) | (0.0330) | (0.0343) | (0.0414) | (0.0343) | (0.0265) |
| Has Tertiary Degree | -0.0098 | 0.0167 | -0.0191*** | 0.0148 | 0.0279** | -0.0096 | 0.0026 | 0.0249*** |
| | (0.0185) | (0.0129) | (0.0053) | (0.0113) | (0.0118) | (0.0142) | (0.0118) | (0.0091) |
| Has Lower Than Secondary Degree | -0.0493 | -0.0148 | -0.0160 | 0.0229 | -0.0038 | 0.0049 | -0.0055 | -0.0096 |
| | (0.0350) | (0.0244) | (0.0100) | (0.0214) | (0.0223) | (0.0269) | (0.0223) | (0.0172) |
| Is in Education | -0.0089 | 0.0246 | 0.0020 | -0.0109 | 0.0113 | -0.0083 | 0.0165 | -0.0032 |
| | (0.0388) | (0.0270) | (0.0110) | (0.0237) | (0.0247) | (0.0297) | (0.0247) | (0.0190) |
| Is Full-Time Employed | -0.0197 | 0.0393 | 0.0188* | 0.0139 | -0.0255 | 0.0073 | 0.0421* | -0.0164 |
| | (0.0347) | (0.0242) | (0.0099) | (0.0212) | (0.0221) | (0.0266) | (0.0221) | (0.0170) |
| Is Part-Time Employed | -0.0219 | 0.0097 | 0.0114 | -0.0015 | -0.0217 | -0.0083 | 0.0068 | -0.0049 |
| | (0.0356) | (0.0248) | (0.0101) | (0.0218) | (0.0226) | (0.0273) | (0.0226) | (0.0174) |
| Is on Parental Leave | -0.0176 | 0.2027 | 0.0206 | 0.0012 | -0.0189 | -0.0086 | 0.0051 | 0.0096 |
| | (0.2021) | (0.1408) | (0.0574) | (0.1237) | (0.1286) | (0.1551) | (0.1285) | (0.0991) |
| Is Unemployed | -0.0645 | 0.0584 | 0.0133 | 0.0586 | 0.0136 | -0.0431 | -0.0050 | 0.0226 |
| | (0.0720) | (0.0501) | (0.0204) | (0.0440) | (0.0458) | (0.0552) | (0.0458) | (0.0353) |
| Individual Income[a] | -0.0179 | 0.0037 | 0.0006 | -0.0067 | 0.0099 | -0.0007 | -0.0057 | -0.0041 |
| | (0.0167) | (0.0117) | (0.0048) | (0.0102) | (0.0106) | (0.0128) | (0.0106) | (0.0082) |
| Has Child in Household | -0.0416 | -0.0224 | 0.0152 | 0.0027 | -0.0446 | 0.0584* | 0.0571** | 0.0632*** |
| | (0.0434) | (0.0302) | (0.0123) | (0.0265) | (0.0276) | (0.0333) | (0.0276) | (0.0213) |
| Household Income[a] | 0.0138 | -0.0017 | 0.0085 | -0.0230* | 0.0176 | -0.0028 | -0.0144 | -0.0004 |
| | (0.0212) | (0.0148) | (0.0060) | (0.0130) | (0.0135) | (0.0163) | (0.0135) | (0.0104) |

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| Regressors | Medical Condition (1) | (2) | (3) | (4) | (5) | (6) | (7) | (8) |
|---|---|---|---|---|---|---|---|---|
| Lives in House[b] | 0.0169 | 0.0288 | 0.0134* | -0.0023 | -0.0013 | 0.0610*** | 0.0327** | 0.0317** |
| | (0.0261) | (0.0182) | (0.0074) | (0.0160) | (0.0166) | (0.0200) | (0.0166) | (0.0128) |
| Lives in Small Apartment Building | 0.1124** | -0.0193 | 0.0604*** | 0.0169 | -0.0350 | 0.0496 | 0.0280 | 0.0188 |
| | (0.0565) | (0.0393) | (0.0160) | (0.0346) | (0.0359) | (0.0433) | (0.0359) | (0.0277) |
| Lives in Large Apartment Building | 0.0053 | 0.0047 | 0.0074 | -0.0063 | -0.0102 | 0.0671*** | 0.0427*** | 0.0165* |
| | (0.0204) | (0.0142) | (0.0058) | (0.0125) | (0.0130) | (0.0157) | (0.0130) | (0.0100) |
| Lives in High Rise | 0.0829*** | -0.0536** | 0.0004 | 0.0258 | 0.0148 | 0.0736*** | 0.0299 | 0.0260* |
| | (0.0311) | (0.0217) | (0.0088) | (0.0190) | (0.0198) | (0.0239) | (0.0198) | (0.0153) |
| Number of Rooms per Individual | -0.0138 | -0.0020 | -0.0047* | -0.0062 | -0.0004 | -0.0074 | -0.0080 | -0.0088** |
| | (0.0088) | (0.0061) | (0.0025) | (0.0054) | (0.0056) | (0.0067) | (0.0056) | (0.0043) |
| Constant | 0.1715 | 0.6159*** | 0.2495*** | 0.5806*** | 0.3264*** | 0.6281*** | 0.5184*** | 0.2050* |
| | (0.2174) | (0.1515) | (0.0618) | (0.1331) | (0.1383) | (0.1669) | (0.1383) | (0.1067) |
| Number of Observations | 2,794 | 2,794 | 2,794 | 2,794 | 2,794 | 2,794 | 2,794 | 2,794 |
| F-Statistic | 19.8900 | 9.8800 | 10.3300 | 7.5100 | 16.4000 | 11.61 | 6.8500 | 3.7200 |
| $R^2$ | 0.1676 | 0.0910 | 0.0947 | 0.0707 | 0.1424 | 0.1052 | 0.0648 | 0.0363 |
| Adjusted $R^2$ | 0.1592 | 0.0817 | 0.0855 | 0.0613 | 0.1337 | 0.0962 | 0.0554 | 0.0265 |

[a] Annually in Euro/Inflation-Adjusted (Base Year 2009), [b] Detached, Semi-Detached, or Terraced

(1) Hypertension, (2) Cardiac Disease, (3) Stroke, (4) Diabetes, (5) Cancer, (6) Joint Disease, (7) Back Complaint, (8) Sleep Disorder

*Robust standard errors in parentheses*
**** p<0.01, ** p<0.05, * p<0.1*

*Note:* All figures are rounded to four decimal places.

*Source:* BASE-II 2009-2012, individuals aged 17 or above, own calculations

Figure B.1: Results - Optimal Value of Distance to Greens

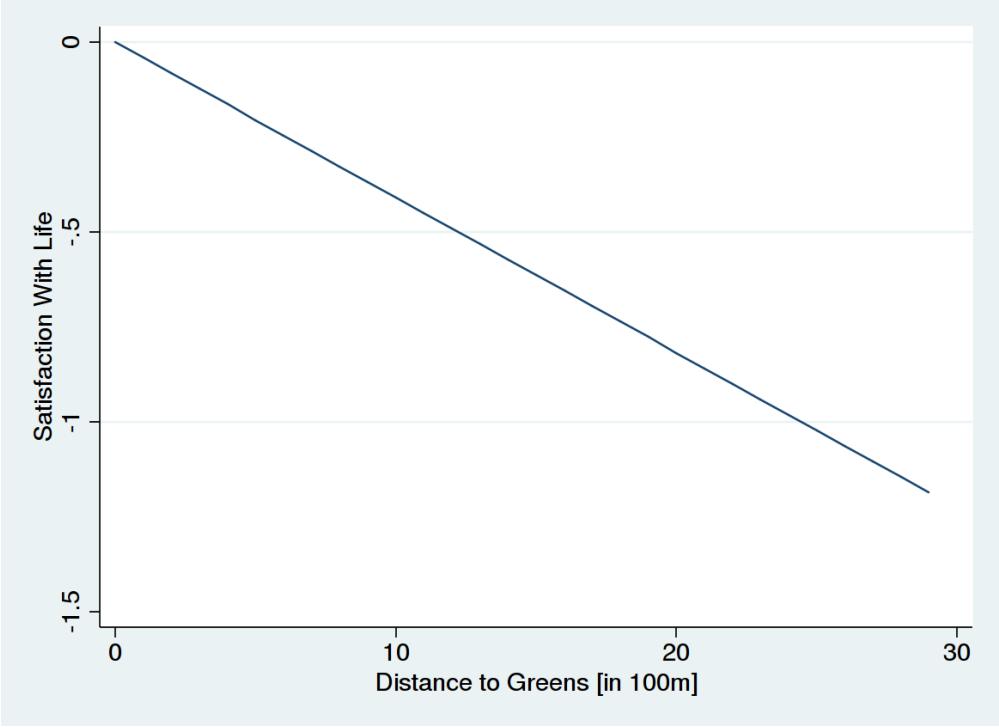



Figure B.2: Results - Optimal Value of Distance to Abandoned Areas

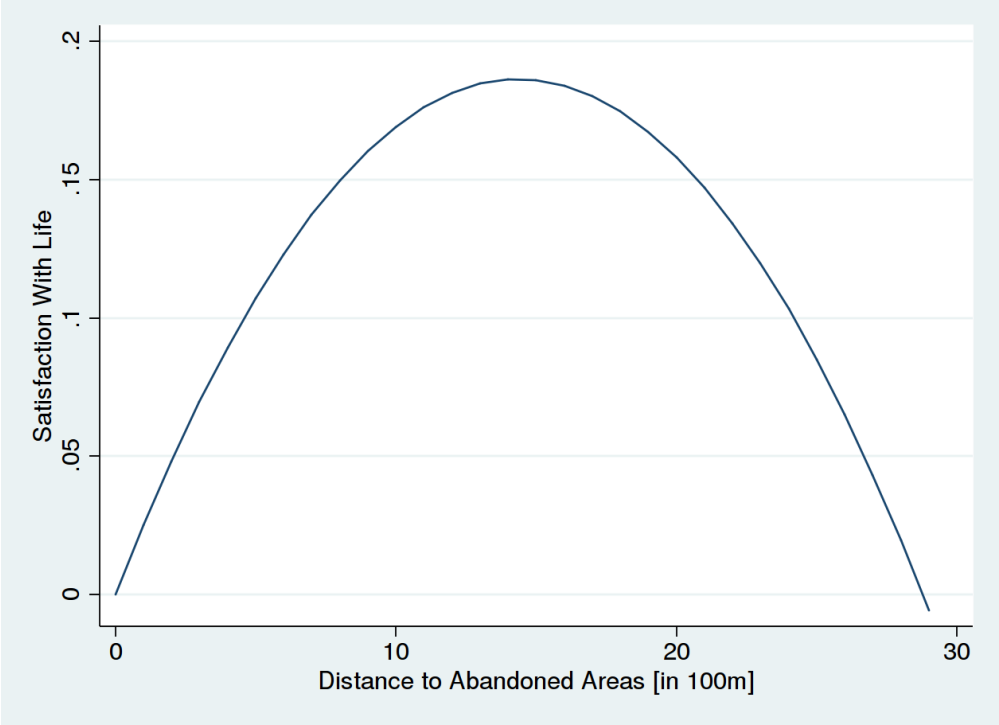


Figure B.3: Results - Optimal Value of Coverage of Greens

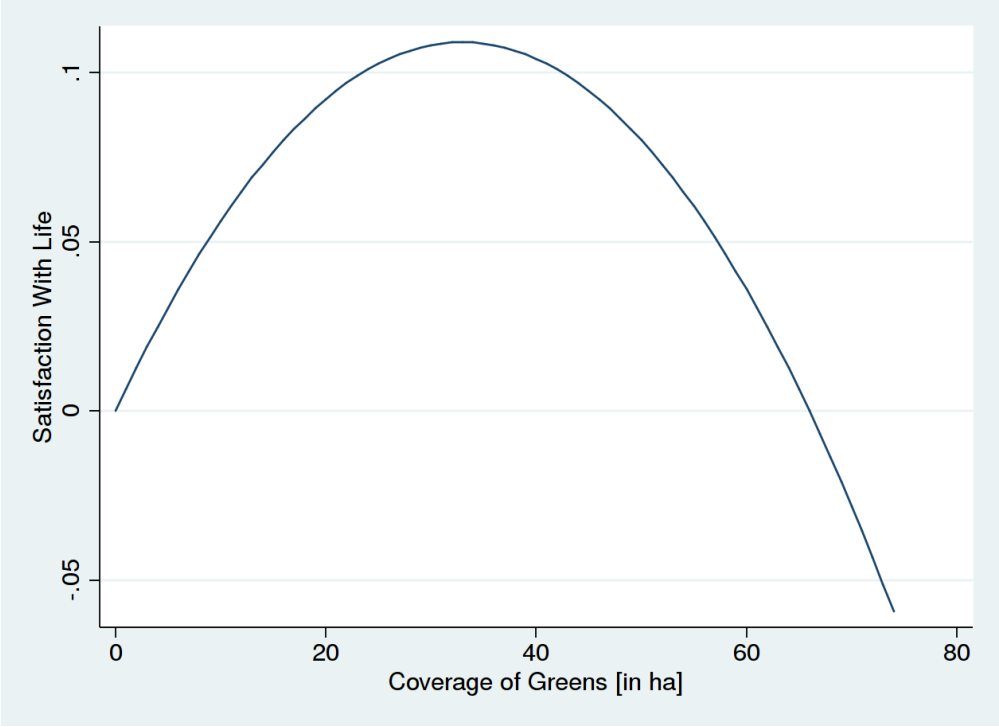
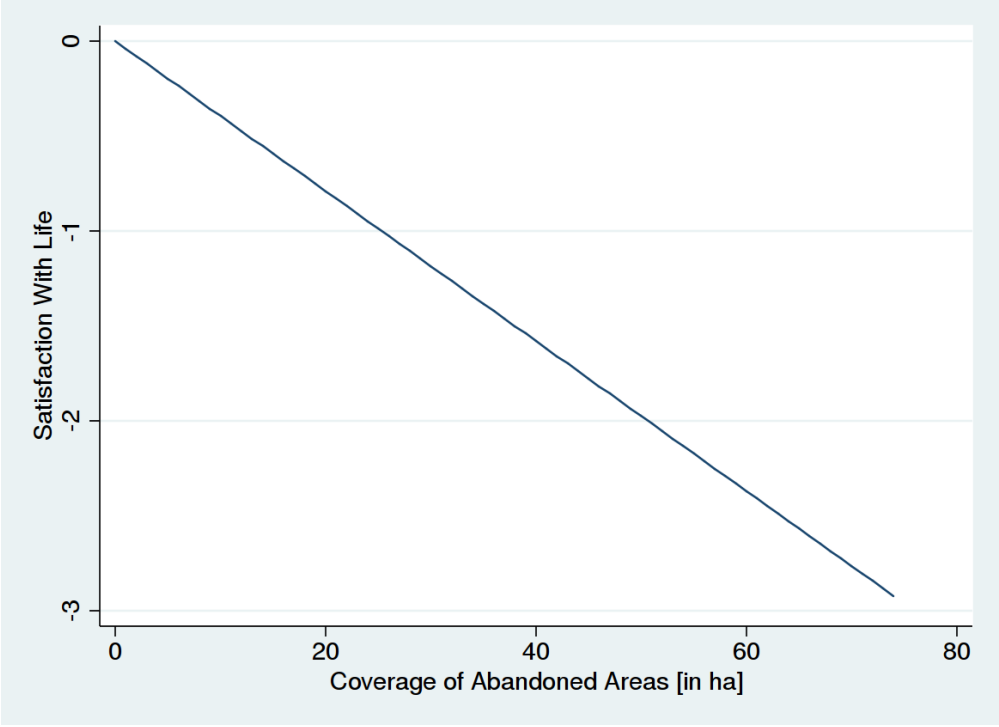



Figure B.4: Results - Optimal Value of Coverage of Abandoned Areas



# Appendix C. Discussion

Figure C.5: Discussion - Thought Experiment