I Z A Institute
of Labor Economics
Initiated by Deutsche Post Foundation

DISCUSSION PAPER SERIES

IZA DP No. 14430

Green Mobility and Well-Being

Lucía Echeverría
J. Ignacio Gimenez-Nadal
José Alberto Molina

MAY 2021

I Z A Institute
of Labor Economics

Initiated by Deutsche Post Foundation

DISCUSSION PAPER SERIES

IZA DP No. 14430

Green Mobility and Well-Being

Lucía Echeverría
University of Zaragoza and CONICET

J. Ignacio Gimenez-Nadal
University of Zaragoza and IEDIS

José Alberto Molina
University of Zaragoza, EIDIS and IZA

MAY 2021

ISSN: 2365-9793

IZA – Institute of Labor Economics

Schaumburg-Lippe-Straße 5–9
53113 Bonn, Germany

Phone: +49-228-3894-0
Email: publications@iza.org

www.iza.org

ABSTRACT

Green Mobility and Well-Being*

Recent years have witnessed efforts worldwide to promote green mobility, aimed at boosting sustainable economic growth. However, how green mobility relates to travelers' well-being remains an open question. We explore whether "green" modes of transportation (public transit and walking/cycling) are associated with higher levels of well-being in comparison to private driving, placing special focus on different types of travel (related to paid work, unpaid work, personal care, childcare, and leisure). We use the UK Time Use Survey (UKTUS) from 2014-2015, and exploit information on self-reported enjoyment during travel, as a measure of experienced well-being. We estimate Ordinary Least Squares and Random Effects regressions for each travel category, and find relative, positive effects of physical transport on enjoyment, in terms of personal care and leisure, while the relative negative effects of public transport are observed for childcare and work/paid travel, in relationship to traditional driving modes. Our evidence suggests a need to develop strategies to effectively promote mobility by physical modes, while improving the experience of public transit users.

JEL Classification: R4, J22

Keywords: subjective well-being, green travelling, walking/cycling, public transport

Corresponding author:
José Alberto Molina
Department of Economic Analysis
Gran Vía 2
50005 Zaragoza
Spain
E-mail: jamolina@unizar.es

* This paper has benefitted from funding from the Spanish Ministry of Science and Innovation (Project "PID2019:108348RA-I00") and the Government of Aragón (Grant S32_20R).

1. Introduction

Transport policies and traveler behaviors are related to how economic activity affects the environment. For instance, transport currently accounts for a quarter of the European Union's greenhouse gas emissions (European Commission, 2019). In the United States, beginning in 2016, the transportation sector overtook the power sector as the primary source of GHG emissions (Bleviss, 2020). In the UK, households contribute substantially to the UK's total emissions - around 74% according to an estimate by Baiocchi, Minx and Hubacek (2010) - and transport activity is important in total emissions (Büchs and Schnepf, 2013). The importance of the transport sector in GHG emissions calls for public policies aimed at tackling transport emissions, with the objective of achieving sustainable economic growth. The European Union, for example, has set an objective of 90% emissions reduction by 2050, and the UK government has announced, as part of a national climate strategy, a plan to decarbonize transport, aiming to start a "green transport revolution" based on green modes of transport and placing special emphasis on active transport, that is, walking and cycling (Department for Transport, 2020). The use of public transport helps to reduce greenhouse gas (GHG) emissions, although physical modes of transport contribute even more (Stanley and Watkiss, 2003). And in addition to reducing gas emissions, active transport has health benefits, such as improving cardiovascular outcomes (Hamer and Chida, 2008) and decreasing overweight/obesity (Wen et al., 2006) and the risk of hypertension (Hayashi et al., 1999).

Demographic forecasts indicate that in 2050 up to 82% of EU citizens will reside in urban areas of different sizes (Resolution of the European Parliament, of December 2, 2015, on Urban Mobility (2014/2242 (INI)), so an analysis of how green modes of transport interact with urban mobility is needed. In this context, urban planning strategies, improving transportation services, deciding investments, and promoting walking/cycling behavior is important for increasing the use of green modes of transport and ultimately reducing GHG emissions. One dimension that must be analyzed is that of how the different modes of transport relate to the well-being of users; understanding how individuals feel during their travels may help to identify factors that boost or discourage the use of green modes of urban mobility, along with those groups who may, comparatively, encounter more problems in the use of green modes of transport. For instance, older individuals may have physical constraints

that limit access to public transport, and thus may have comparatively worse experiences than younger individuals. If that is the case, better access to public transport should be granted.

Prior analyses of the relation between mode choice and travel satisfaction rely on data from ad-hoc surveys or experiments, and find that public transit is associated with lower levels of travel satisfaction, while active travel brings greater satisfaction (Ettema et al., 2011; Werner and Evans, 2011; Abou-Zeid et al., 2012; Erikson et al., 2013; De Vos et al., 2016). More recently, studies analyzing the relationship between feelings and mode of transport, using National Time Use Surveys, have focused on the case of the United States (Morris and Guerra, 2015; Zhu and Fan, 2018). Almost all studies have centered their attention on commuting to and from work. Additionally, evidence focusing on green mobility and well-being is scarce and recent, suggesting that the study of this relationship deserves further consideration.[1] To our knowledge, no prior research has explicitly focused on well-being and "green" transportation as a substitute for driving related to paid work, unpaid work, personal care, childcare, and leisure.

Within this framework, we aim to explore whether "green" modes of transport (public transit and walking/cycling) are associated with higher levels of experienced well-being, in comparison to private driving, considering travel for different purposes. We use the UK Time Use Survey (UKTUS) from 2014-2015, in which individuals are asked how much, on a scale from 1 ("not at all") to 7 ("very much"), they enjoyed each travel activity. We estimate Ordinary Least Squares and Random Effects panel regressions for each travel category, to study differences in the levels of enjoyment when travelling via public transport or physical modes, in comparison to private driving. We further control for the scaling effect of individuals, allowing for an individual-specific interpretation of the enjoyment question. Our results indicate that, in general, walking/cycling increases well-being in comparison to private transport, regardless of the purpose of the travel, while the opposite applies for public transit. Larger positive effects of physical transport on enjoyment are found for personal care

[1] For instance, Cloutier et al. (2017) assess the relationships between sustainable commuting and subjective well-being in U.S. metropolitan areas and complement results with case studies of the highest and lowest scoring Gallup Healthways Well-Being Index cities.

and leisure travel, while larger negative effects of public transport are observed for childcare and work/paid travel. OLS and RE estimations yield robust results.

Our evidence suggests that developing strategies to promote green mobility via physical activity may reduce gas emissions while significantly enhancing travelers' experiences. Thus, investments in appropriate infrastructures may help the "greening" of individual behaviors in travel activities, which would complement strategies to produce behavioral changes in favour of pro-environmental behaviors, such as shifting consumption patterns to relatively low-impact alternatives, or decreasing overall consumption (Stern et al., 1997; Shwom and Lorenzen, 2012; Schmitt et al, 2018). However, if sustainability is to be achieved by increasing the use of public transit, more effort should be made to improve the experiences of users, in light of their significantly lower levels of enjoyment. Strategies in this line may involve better safety and comfort measures, more direct routes, reliability, punctuality, and less-crowded services (Mann and Abraham, 2006). In addition, a related line of the literature suggests that policies may need to take into account some of the psycho-social satisfaction derived from the use of different modes of transport, because driving a car appears to be related to greater psycho-social benefits - such as self-esteem, feelings of autonomy, protection, shelter, and prestige - in comparison with public transit users (Hiscock et al. 2002; Ellaway et al., 2003).

The remainder of the paper is as follows. Section 2 presents a review of the literature. Section 3 presents the data and variables, Section 4 describes the empirical strategy, and Section 5 describes the results. Section 6 draws our main conclusions.

2. Literature Review

Transportation is currently responsible for nearly one quarter of all energy-related greenhouse gas (GHG) emissions (UN, 2019), and this dependence on fossil fuel consumption creates health and environmental problems. It is well-known that greenhouse gases in the atmosphere accumulated from combustion of fossil fuels has led to an increase in the Earth's average temperature, termed 'global warming'. In addition, air pollution has negative externalities on health, increasing respiratory and cardiovascular disease, and the

frequency of respiratory symptoms and use of medication by those with asthma and reduced lung function (WHO, 2006).

Urban mobility is mainly based on the motor car, the second biggest contributor to greenhouse gas emissions in the transport sector (behind road freight). However, there are other, less-polluting modes of transport that may contribute to alleviate the environmental burdens of mobility. Using public transport helps to reduce greenhouse gas emissions, while the use of physical modes of mobility is the most environmentally friendly solution for personal mobility, since it involves 'zero carbon' (Chapman, 2007).

One strand of the literature has focused on examining the socio-demographic characteristics of individuals who choose green modes of transport as a viable alternative to driving a car. Studies have focused either on physical modes, including cycling and walking (Sener et al., 2009; Buehler, 2011; Buehler et al., 2011; Panik et al., 2019), or on public ridership (Buehler, 2011; Buehler and Pucher, 2012). In general, age, gender, education level, living in an urban area, and the number of children in the household are among the most frequent determinants of green mobility.[2] *Vis a vis* comparisons across countries suggests that the relationship between green travel and individual characteristics is not necessarily generalizable (Buehler, 2011; Buehler et al., 2011; Panik et al., 2019).

Additionally, a relevant sub-set of evidence has placed special attention on travel to and from work. Heinen et al. (2010) provide a comprehensive overview of the literature on socio-demographic and family characteristics of individuals going to work by bicycle. Molina et al. (2020) analyze, for a set of developed countries, the relationship between the socio-demographic characteristics of individuals and the propensity to carpool in commuting trips.

Individuals who are pro-environment, captured by indicators that include walking/cycling and using public transportation, are likely to have higher levels of life satisfaction (Schmitt et al., 2018; Welsch et al., 2021). However, green behavior may not be related to other life domains. Some studies have found no significant association between individuals' pro-

[2] Transport emissions are found to be positively related to education, age, employment, rural location and the number of adults in the household (Büchs and Schnepf, 2013).

environmental behavior and subjective and objective measures of work-life balance (Melo et al., 2018), and no strong link has been established between an individual's carbon footprint, including the use of private car, and subjective well-being (Andersson et al., 2014; Verhofstadt et al., 2016).

Green mobility is also significantly associated with subjective well-being during travel. Depending on the particulars of a given survey, subjective well-being can be understood as happiness, enjoyment, and satisfaction, or the lack of experienced negative emotions, such as stress, fatigue, and sadness. The literature documents that public transit is related to lower levels of travel satisfaction (Ettema et al., 2011; Eriksson et al., 2013), but a physical mode of travel is related to higher levels (Morris and Guerra, 2015; Zhu and Fan, 2018), compared to driving a car. Among transit use, travelling by bus is associated with lower levels of well-being, compared to travelling by train (De Vos et al., 2016; Ettema et al., 2011; Morris and Guerra, 2015; Wener and Evans, 2011). Studies documented in the literature analyze all travel as a whole, without differentiating by purpose, or they focus on one specific kind of travel, such as leisure or commuting.

The positive association between green mobility and well-being is consistent across countries and types of surveys, either by relying on experiments or national time use surveys. Erikson et al. (2013) perform an experiment in Sweden employing undergraduates, to study the effect on satisfaction of different travel modes of commuting. The authors find that a car is rated higher than a bus in terms of satisfaction with travel. However, the level of daily satisfaction is not related solely to travel mode. An experiment conducted in Switzerland, by Abou-Zeid et al. (2012), examines the effects of a temporary change in the mode of travel to work on travel happiness. Participants who usually commuted by car were required to temporarily use public transport. Participants reported significantly greater satisfaction levels with the commute by car, compared to the levels reported pre-treatment. The experiment also revealed that none of the participants switched completely to public transport, even though they were given free public transit passes as an incentive, while the majority of participants were neither satisfied nor dissatisfied with their public transport experience.

Werner and Evans (2011) find, for the city of Metropolitan New York, that car commuters present significantly higher levels of reported stress and more negative moods, compared to train users. De Vos et al. (2016) study the relation between mode choice and travel satisfaction for leisure trips of study participants in urban and suburban neighborhoods, in the city of Ghent in Belgium. The authors find that public transit users perceive their travel the most negatively, while active travel results in the highest levels of satisfaction. Morris and Guerra (2015) and Zhu and Fan (2018) provide evidence for the United States, using the American Time Use Survey's well-being module. Evidence for the US indicates that cyclists are the happiest travelers, while bus and train riders experience the most negative emotions. In addition, Cloutier et al. (2017) assess the relationships between green commuting and subjective well-being at the level of U.S. metropolitan areas. They complement their results with case studies of the highest- and lowest-scoring Gallup Healthways Well-Being Index cities, in order to explore the importance of pro-sustainable transportation policies. The evidence suggests that cities that provide incentives for residents to use green commute modes may offer greater opportunities for happiness.

3. Data and Variables

We use the UK Time Use Survey (UKTUS) carried out between April 2014 and December 2015. The UKTUS is the official time use survey of the United Kingdom and was conducted on behalf of the University of Oxford's Centre for Time Use Research (CTUR) by NatCen and the Northern Ireland Statistics and Research Agency (NISRA). The survey sample comprises 4,741 households in England, Scotland, Wales, and Northern Ireland, and follows the Harmonised European Time Use Survey (HETUS) guidelines, with a few adaptations intended to tailor the survey to UK users and to ensure compatibility with the 2000-01 UK Time Use study.

The main instrument of this survey is the time use questionnaire. In the UKTUS, two diaries are completed by respondents on selected days, and each diary is divided into time intervals where the respondent records a main activity, and other features, such as the secondary activity carried out simultaneously with the primary activity, whether the activity was performed in the company of another person, where the activity took place, and the mode

of transport. An extensive literature confirms the reliability and validity of diary data and its superiority over other time-use surveys based on stylized questions, asking respondents to estimate time in commuting on a 'typical day' (e.g., Robinson and Godbey 1985; Juster and Stafford 1985).

Time use data allow for an accurate measure of travel time in comparison with other datasets, as the main purpose of the activity is reported by the respondent. For instance, we can distinguish between pure commuting episodes and other episodes that are ancillary activities, such as picking up children from school. Time use surveys provide information on duration, departure and arrival times, location, and mode of transport, and while they are inferior in comparison to other datasets, such as National Travel Surveys, they are complementary (Kitamura et al., 1997). The use of time-use surveys in transportation research has become common (Gimenez-Nadal and Molina, 2014; 2016; Jara-Díaz and Rosales-Salas, 2015; Gimenez-Nadal, Molina and Velilla, 2018a, 2018b), although one limitation of such surveys is that commuting distance is not available, so issues related to distance cannot be analyzed, and therefore cannot be used to explain travelling time.

We want to analyze the relationship between mode of transport and the feelings experienced during travel, and thus we restrict the sample to travel episodes. We eliminate observations of respondents with missing information on feelings and/or socio-demographic characteristics, leaving a sample of 29,930 travel episodes from 4,586 individuals. We classify travel activities according to their purpose: travel related to paid work (to/from work), unpaid work (household care, shopping, organizational work and informal help of others, voluntary, civic and religious travel, among others), personal care (personal business and physical exercise), childcare (escorting to/from school, escorting a child) and leisure (walking, hiking, biking, skiing and skating, visiting friends/relatives, social activity, entertainment and cultural activities, gambling, day trip/just walking, among others).[3] Table A.1 in the Appendix provides a detailed list of all travel activities included in each category. Table 1 reports the average time devoted to each travel category. We observe that the average duration of travel episodes is 21.61 minutes per day when travelling to work, 18.23 minutes

[3] For the activities, we follow Aguiar and Hurst (2007) and Gimenez-Nadal and Sevilla (2012) and consider the following five categories: paid work, unpaid work, personal care, childcare, and leisure.

per day in unpaid work travels, 18.34 minutes per day in personal care travels, 18.37 minutes per day in childcare travels, and 24.83 minutes per day in leisure-related travels.[4]

We analyze the relationship between mode of transport and the feelings experienced during travel. To that end, we classify survey information on mode of transport, following Gimenez-Nadal and Molina (2019). We focus on private transport (car, truck, or motorbike, both as driver or passenger), public transport (bus, subway, tram, boat, ferry, taxi, or airplane) and physical transport (walking and cycling). Table 1 shows the proportions of time for each mode of transport. The most frequent mode of transport is private car, ranging from 79% for personal care to 55% for leisure. After private car use, the physical mode of transport is the most used by individuals in the UK. When we focus on the differences between the different modes of transport, the smallest differences between the proportion of private and "green" mode of transports are observed in leisure travel.

Our main variable of interest refers to the enjoyment reported by individuals during their travel. The UKTUS offers information on the level of enjoyment for the different activities in the diary. The Day Reconstruction Method is used, and respondents record their daily activities for the selected day. In addition, the survey collects information on hedonic experiences (or instant well-being) in real time during all daily episodes. Individuals are asked about their feelings while doing the activities (Kahneman et al. 2004). In particular, they are asked "how much did you enjoy this time?", with answers ranging from 1, "not at all", to 7, "very much". With this information, we compute the level of enjoyment for each travel episode. Table 1 reports the average level of enjoyment experienced during different travel activities. On the scale from 1 to 7, the average level of enjoyment associated with travel episodes is between 4 and 5, with a similar variability, depending on the category. We observe that higher levels of enjoyment correspond to leisure (5.35) and personal care (5.18) travel, while lower levels are observed for commuting (4.61).

Table 2 shows the average enjoyment levels of travel activities, by mode of transport. We observe that the highest levels of enjoyment correspond to a physical mode of transport in all

[4] Regarding the proportion of travel time that each travel category represents, we observe that 19% of all travelling episodes are travels related to paid work, 32% to unpaid work, 5% to personal care, 10% to childcare and 34% to leisure. Percentages are computed at the diary level, and are calculated as a proportion of the total travel time in the diary.

the activities, while the lowest levels of enjoyment correspond to public transport. The average enjoyment of respondents during physical modes of transport is 4.82 in paid work travel, 5.16 in unpaid work travel, 5.49 in personal care travel, 5.03 in childcare travel, and 5.69 in leisure travel. Respondents using public transit report an average enjoyment level of 4.21 in paid work travel, 4.71 in unpaid work travel, 4.70 in personal care travel, 4.28 in childcare travel, and 4.95 in leisure travel. Private care travel lies in between physical modes and public transport, with the exception of childcare travel, where respondents report a comparatively high level of enjoyment in comparison to physical modes. In sum, physical modes of transport are revealed as the most enjoyable modes of mobility, while public transit is the least enjoyable mode of mobility.

The UKTUS also collects socio-demographic characteristics at the individual level, which we include as control variables in our empirical strategy. We consider age, gender, level of formal education (completed secondary or less, and university), native status, marital status (married/cohabiting, and single), employment status (employed and unemployed), household composition (number of family members, and the number of children under 18 years old), and geographical regions (North East, North West and Merseyside, Yorkshire and Humberside, East midlands, West midlands, East of England, London, South East, South West, Wales, Scotland, and Northern Ireland). Descriptive statistics are reported in Table A.2 of the Appendix. Travelers are, on average, 44 years old, 47% of the sample are men, 37% have secondary education or less, 86% are native, and 67% are employed. Regarding family composition, 64% of the sample live in couple, and in families of 3 members, on average.

4. Empirical Strategy

We analyze the relationship between the experienced well-being of individuals during different types of travel and the use of "green" modes of transport. To that end, we estimate the following linear equation using Ordinary Least Squares (OLS) and Random Effects models. Estimations are performed at the episode-level and separately for each travel category (travel related to paid work, unpaid work, personal care, childcare, and leisure). We estimate the following baseline specification:

$$WB_{ij} = \alpha + \beta G_{ij} + \gamma X_i + \delta E_{ij} + \eta FE_i + \varepsilon_{ij} \qquad (1)$$

where WB_{ij} is the experienced well-being of individual i in travel episode j. Regressions are performed at the episode-level. Respondent's well-being is captured by the level of enjoyment experienced in each episode. We standardize WB_{ij} to have an average value of zero and standard deviation of 1 (i.e., z-score) so that each estimated coefficient can be interpreted as the change in terms of one standard deviation of enjoyment, where standardization is done for each travel activity separately.

G_{ij} is a vector of indicator variables of "green" modes of transport, including, separately, public and physical transport, which are compared to car driving (reference category). X_i is a vector of the socio-demographic characteristics defined in the previous Section, and includes age (and its square), gender, education level, native status, employment status, living in couple, household size, and number of children in the household. E_{ij} is a vector of variables used to control for cross-episode heterogeneity, and includes the duration of the episode (defined in log of minutes) and its square to account for saturation affects, variables indicating the presence of others during each travel episode (travelling alone, with parents, with spouse, with child, with other family member, or with non-family) and an indicator variable if the travel took place on a weekday or at the weekend. FE_i controls for region of residence, and month (January to December) and year (2014 or 2015) of the interview. Standard errors are robust, and the error term is clustered at the individual level in the OLS estimation. Observations are weighted at the individual level using the survey weights.

The use of a scale to measure self-reported well-being is subject to different interpretations across individuals of what the scale of measurement really refers to, leading to a lack of independence across measures within a respondent (Kahneman and Krueger, 2006). To further consider the scaling effect of individuals, we augment the baseline specification of Eq. (1) to control for unobserved heterogeneity and account for fixed individual traits. Thus, we allow for an individual-specific interpretation of the enjoyment question. We estimate three alternative specifications using both Ordinary Least Squares and Random Effects models. First, we include as a control variable the average level of enjoyment of each individual in all non-travel episodes (paid work, unpaid work, personal care, childcare, and leisure). Second, we interact this variable with total time (minutes per day) spent in all non-travel episodes. Third, we include as a control variable the weighted average level of

enjoyment of each individual in all non-travel episodes. For the weighted average of the level of enjoyment in non-travel episodes, we compute for each individual the sum of the average level of enjoyment in each non-travel activity weighted by the proportion of time spent on it out of total non-travel time in the diary. Table A.2 of the Appendix shows the average values of enjoyment during non-travel episodes, and we observe that, in comparison to travel activities, the average levels of well-being experienced in non-travel activities are slightly higher.

5. Results

Tables 3 and 4 show the results of Ordinary Least Squares and Random Effects regressions for each travel category. We are interested in the parameters of "green" modes of transport, which compare the average level of enjoyment when travelling for different purposes via public or physical transport to private driving. All regressions control for additional episode-level and socio-demographics characteristics.[5] Panel (A) in Tables 3 and 4 shows the estimates of our baseline specification (Eq. (1)). Results from the OLS model indicate that, on average, the physical mode of transport (walking and cycling) is significantly related to higher levels of enjoyment in all types of travel. Public transportation is significantly related to lower levels of enjoyment, with the exception of personal care travel, which is not statistically significant. Thus, using a physical mode of transport is, in comparison to the use of private cars, related to a comparatively higher level of enjoyment of 0.128, 0.151, 0.277, 0.183, and 0.315 of a standard deviation of enjoyment during paid work travel, unpaid work travel, personal care travel, childcare travel, and leisure travel, respectively. The use of public transit is, in comparison to the use of private cars, related to a comparatively lower level of enjoyment of 0.252, 0.220, 0.262, and 0.152 of a standard deviation of enjoyment during paid work travel, unpaid work travel, childcare travel, and leisure travel, respectively.

Regarding the RE estimates, similarly to OLS results, we observe that walking and cycling are, on average, significantly and positively related to well-being travel for different purposes, with the exception of childcare. On the other hand, public transport is, on average,

[5] The full set of estimates of each OLS and RE regressions is reported in Table A.3 and Table A.4, respectively.

significantly and negatively related to well-being only in the case of paid work travel. Specifically, using a physical model of transport is, in comparison to the use of private cars, related to a comparatively higher level of enjoyment of 0.087, 0.172, 0.209, and 0.330 of a standard deviation of enjoyment during paid work travel, unpaid work travel, personal care travel, and leisure travel, respectively. The use of public transport is, in comparison to the use of private cars, related to a comparatively lower enjoyment of 0.150 of a standard deviation of enjoyment during paid work travels.

In sum, in both OLS and RE estimations, the largest positive effects of physical transport on enjoyment are found for personal care and leisure travel, while the largest negative effects of public transit are observed for childcare and paid work travel. We now explore the robustness of our results by using several alternative specifications.

Panels (B) to (D) of Tables 3 and 4 control for individual unobserved heterogeneity, in order to consider the scaling effect of individuals. It could be that those individuals reporting higher enjoyment while using a physical mode of transport also report higher levels of enjoyment during their non-travel activities, and thus the positive relationship between the use of physical modes of transport and enjoyment is due to personal unobserved characteristics (i.e., differences in scale) and not to the mode of transport. To that end, Panel B of Tables 3 (OLS) and 4 (RE) shows the results of including the individuals' average level of enjoyment in all non-travel episodes (paid work, unpaid work, personal care, childcare, and leisure activities) as a control variable in the estimations. Panel C of Tables 3 and 4 includes the interaction between individuals' average level of enjoyment in all non-travel episodes with total time (minutes per day) spent in all non-travel episodes. Panel (D) of Tables 3 and 4 shows the results of including the individuals' weighted average level of enjoyment in each non-travel activity.

Regarding the OLS results when controlling for the scaling effect of individuals, we find that all our estimates are robust to the inclusion of the heterogeneity of individuals in scales, both in terms of direction and statistical significance. Furthermore, we observe that the average level of enjoyment in all non-travel episodes is positively related to the level of enjoyment experienced during different kinds of travel (Panel (B)), indicating the existence of a heterogeneity of individuals in scales, since individuals who report higher levels of well-

being in non-travel activities also report higher levels of well-being when travelling.[6] The same effect is found for the weighted average level of enjoyment (Panel (D)).

RE estimates are also robust when we control for individual unobserved heterogeneity. Further, adding these controls improves the statistical significance of public transit estimates in the case of travel related to childcare and leisure (Panels (A) to (D)), as well as the statistical significance of physical transport in childcare travel (Panel (D)). In addition, robust results are found for the control variables included to account for the scaling effect of individuals, in comparison to results estimating OLS models.

Our regressions implicitly assume that the measure of well-being is cardinal, a standard interpretation in the literature of well-being (Ferrer-i-Carbonell and Frijters, 2004). However, we test the robustness of our results using alternative models that assume ordinality, such as the linear ordered logit and RE ordered logit models (Crouchley, 1995), as in Tables A.5 and A.6 which assume ordinality in the enjoyment measure. Results are robust and consistent with our main results shown in Tables 3 and 4.

When we explore which socio-demographic and episode characteristics are related to enjoyment during travel activities, from tables A.3 and A.4, we observe that estimates are sensitive to specifications (Panels (A) to (D)) and estimation methods (OLS and RE). However, we find that certain conditional associations are robust across all specifications and both regression methods. In particular, travelling with non-family is related to higher levels of enjoyment in the case of unpaid work travel and leisure travel. Travelling alone is negatively related to enjoyment in the same kinds of travel. Interestingly, travelling during the weekend in comparison to the weekday is not correlated with enjoyment in any of the travels considered. Regarding socio-demographic variables, we find that being native is negatively associated with enjoyment during leisure travel. Family size is also negatively

[6] This relationship could also be interpreted as a "cheering" effect of physical modes of transport on non-travel activities (Gimenez-Nadal and Molina, 2015). That is, those individuals who use physical modes of transport could enjoy other non-travel activities more, because the positive effects of physical modes of transport (and also the health benefits of physical activity) on enjoyment spread to other non-travel activity. In the same vein, the relationship between lower enjoyment of travel by public transit and lower enjoyment in non-travel activities could be due to a "saddening" effect (Knabe et al., 2010). We cannot analyze causality issues with the data at hand, and thus we cannot test these hypotheses.

related to enjoyment during personal care travel, while the number of children is positively related.

6. Conclusions

This paper analyses the enjoyment of individuals in the UK during their travel activities, focusing on differences across modes of transport. We estimate Ordinary Least Squares and Random Effects panel regressions for each travel category to study differences in the level of enjoyment when travelling via public transport or physical transport, in comparison to private driving. Our results indicate that, in general, walking/cycling increases well-being in comparison to private transport, regardless of the purpose of the travel, while the opposite is evidenced for public transit. Larger positive effects of physical transport on enjoyment are found for personal care and leisure travel, while larger negative effects of public transit are observed for childcare and work-paid travels.

In sum, the relationship between a sustainable mode of transport and instant well-being in different travel activities strongly relies on the nature of the transport. In general, a physical mode of transport is related to increased enjoyment in comparison to private transport, regardless of the purpose of the travel, while the opposite is found for public transit. These results are in line with the literature indicating that public transit is associated with lower levels of satisfaction, although prior evidence focuses only on commuting to work. Possible explanations include uncomfortable and crowded service, indirect routes, costs, and lack of safety, reliability, and punctuality (Mann and Abraham, 2006). On the other hand, higher levels of well-being during walking and cycling may be related to improvements in health conditions as well as the physiological benefits derived from feelings of freedom, control, and autonomy (Vella-Broderick and Delbosc, 2011), or the sense of doing something to help the environment (Schmitt et al., 2018). Further research should disentangle what corresponds to the former and what corresponds to the latter.

Our evidence suggests that developing strategies to promote green mobility via physical activities may reduce gas emissions while significantly enhancing the travel experience. As a consequence, larger investments in infrastructure are crucial to make walking and cycling a more natural or obvious choice for travel. However, if sustainability is to be achieved by

increasing the use of public transit, more effort should be made to improve the experience of public transit users, which may involve better safety and comfort measures, more direct routes, reliability, punctuality, and less crowding.

REFERENCES

Abou-Zeid, M., Witter, R., Bierlaire, M., Kaufmann, V., and Ben-Akiva, M. 2012. Happiness and travel mode switching: findings from a Swiss public transportation experiment. *Transport policy*, *19*, 93-104.

Aguiar, M., and Hurst, E. 2007. Measuring trends in leisure: The allocation of time over five decades. *Quarterly Journal of Economics,* 122, 969-1006.

Andersson, D., Nässén, J., Larsson, J., and Holmberg, J. 2014. Greenhouse gas emissions and subjective well-being: An analysis of Swedish households. *Ecological Economics*, *102*, 75-82.

Baiocchi, G.,Minx, J., Hubacek, K., 2010. The impact of social factors and consumer behavior on carbon dioxide emissions in the United Kingdom. *Journal of Industrial Ecology,* 14, 50–72.

Bleviss, D. (2020). Transportation is critical to reducing greenhouse gas emissions in the United States. *WIREs Energy and Environment,* 10, e390.

Büchs, M., and Schnepf, S. V. 2013. Who emits most? Associations between socio-economic factors and UK households' home energy, transport, indirect and total CO2 emissions. *Ecological Economics*, *90*, 114-123.

Buehler, R. 2011. Determinants of transport mode choice: a comparison of Germany and the USA. *Journal of transport geography*, 19, 644-657.

Buehler, R., and Pucher, J. 2012. Demand for public transport in Germany and the USA: an analysis of rider characteristics. *Transport Reviews*, 32, 541-567.

Buehler, R., Pucher, J., Merom, D., and Bauman, A. 2011. Active travel in Germany and the US: contributions of daily walking and cycling to physical activity. *American Journal of Preventive Medicine*, 41, 241-250.

Chapman, L. 2007. Transport and climate change: a review. *Journal of transport geography*, 15, 354-367.

Cloutier, S., Karner, A., Breetz, H. L., Toufani, P., Onat, N., Patel, S., Paralkar, S., Berejnoi, E., Morrison, B. A., Papenfuss, J., Briggs, D., & Carlson, C. 2017. Measures of a Sustainable Commute as a Predictor of Happiness. *Sustainability*, 9, 1214.

De Vos, J., Mokhtarian, P. L., Schwanen, T., Van Acker, V., and Witlox, F. 2016. Travel mode choice and travel satisfaction: bridging the gap between decision utility and experienced utility. *Transportation*, 43, 771-796.

Department for Transport (DfT). 2020. Decarbonising Transport: Setting the Challenge.

Ellaway, A., Macintyre, S., Hiscock, R., and Kearns, A. 2003. In the driving seat: psychosocial benefits from private motor vehicle transport compared to public transport. *Transportation Research Part F: Traffic Psychology and Behaviour*, 6, 217-231.

Eriksson, L., Friman, M., and Gärling, T. 2013. Perceived attributes of bus and car mediating satisfaction with the work commute. *Transportation Research Part A: Policy and Practice*, *47*, 87-96.

Ettema, D., Gärling, T., Eriksson, L., Friman, M., Olsson, L. E., and Fujii, S. 2011. Satisfaction with travel and subjective well-being: Development and test of a measurement tool. *Transportation Research Part F: Traffic Psychology and Behaviour*, *14*, 167-175.

European Commission. 2019. Sustainable mobility: the European Green Deal.

Ferrer-i-Carbonell, A., and Frijters, P. 2004. How important is methodology for the estimates of the determinants of happiness? *The Economic Journal,* 114, 641-659.

Gimenez-Nadal, J. I., Molina, J. A., and Velilla, J. 2018a. The commuting behavior of workers in the United States: Differences between the employed and the self-employed. *Journal of Transport Geography*, 66, 19-29.

Gimenez- Nadal, J. I., Molina, J. A., and Velilla, J. 2018b. Spatial distribution of US employment in an urban efficiency wage setting. *Journal of Regional Science*, 58, 141-158.

Gimenez-Nadal, J. I., and Molina, J. A. 2014. Commuting time and labour supply in the Netherlands: A time use study. *Journal of Transport Economics and Policy*, 48, 409-426.

Gimenez-Nadal, J. I., and Molina, J. A. 2015. Voluntary activities and daily happiness in the United States. *Economic Inquiry*, 53, 1735-1750.

Gimenez-Nadal, J. I., and Molina, J. A. 2016. Commuting time and household responsibilities: Evidence using propensity score matching. *Journal of Regional Science*, 56, 332–359.

Gimenez-Nadal, J. I., and Molina, J. A. 2019. Green commuting and gasoline taxes in the United States. *Energy Policy*, *132*, 324-331.

Gimenez-Nadal, J.I., and Sevilla, A. 2012. Trends in time allocation: A cross-country analysis. *European Economic Review* 56, 1338-1359.

Hamer, M., and Chida, Y. 2008. Active commuting and cardiovascular risk: a meta-analytic review. *Preventive medicine*, 46, 9-13.

Hayashi, T., Tsumura, K., Suematsu, C., Okada, K., Fujii, S., and Endo, G. 1999. Walking to work and the risk for hypertension in men: the Osaka Health Survey. *Annals of internal medicine*, *131*, 21-26.

Heinen, E., Van Wee, B., and Maat, K. 2010. Commuting by bicycle: an overview of the literature. *Transport reviews*, *30*, 59-96.

Hiscock, R., Macintyre, S., Kearns, A., and Ellaway, A. 2002. Means of transport and ontological security: Do cars provide psycho-social benefits to their users?. *Transportation Research Part D: Transport and Environment*, *7*, 119-135.

Jara-Díaz, S., and Rosales-Salas, J. 2015. Understanding time use: Daily or weekly data? T*ransportation Research Part A: Police and Practice*, 76, 38-57.

Juster, T., and Stafford, F., 1985. *Time, Goods, and Well-Being*. Ann Arbor: Institute for Social Research, The University of Michigan.

Kahneman, D., and Krueger, A. B. 2006. Developments in the measurement of subjective well-being. *Journal of Economic Perspectives*, *20*, 3-24.

Kahneman, D., Krueger, A. B., Schkade, D., Schwarz, N., and Stone, A. 2004. A survey method for characterizing daily life experience: The day reconstruction method. *Science,* 306, 1776-1780.

Kitamura, R., Fujii, S., and Pas, E. I. 1997. Time-use data, analysis and modeling: toward the next generation of transportation planning methodologies. *Transport Policy*, 4, 225-235.

Knabe, A., Rätzel, S., Schöb, R., and Weimann, J. 2010. Dissatisfied with life but having a good day: time-use and well-being of the unemployed. *The Economic Journal*, *120*(547), 867-889.

Mann, E., and Abraham, C. 2006. The role of affect in UK commuters' travel mode choices: An interpretative phenomenological analysis. *British journal of psychology*, 97, 155-176.

Melo, P. C., Ge, J., Craig, T., Brewer, M. J., and Thronicker, I. 2018. Does work-life balance affect pro-environmental behaviour? Evidence for the UK using longitudinal microdata. *Ecological economics*, 145, 170-181.

Molina, J. A., Giménez-Nadal, J. I., and Velilla, J. 2020. Sustainable commuting: Results from a social approach and international evidence on carpooling. *Sustainability*, 12, 9587.

Morris, E. A., and Guerra, E. 2015. Mood and mode: does how we travel affect how we feel?. *Transportation*, 42, 25-43.

Panik, R. T., Morris, E. A., and Voulgaris, C. T. (2019). Does walking and bicycling more mean exercising less? Evidence from the US and the Netherlands. *Journal of Transport & Health*, *15*, 100590.

Robinson, J.P., and Godbey, G., 1985. *Time for Life: The Surprising Ways Americans Use Their Time*. Penn State University Press, University Park, Pennsylvania.

Schmitt, M. T., Aknin, L. B., Axsen, J., and Shwom, R. L. 2018. Unpacking the relationships between pro-environmental behavior, life satisfaction, and perceived ecological threat. *Ecological economics*, *143*, 130-140.

Shwom, R., Lorenzen, J.A., 2012. Changing household consumption to address climate change: social scientific insights and challenges. *WIRES Climate Change*, 3, 379–395.

Stanley, J., and Watkiss. P. 2003. *Transport energy and emissions: Buses*. In Handbooks in Transport 4: Handbook of Transport and the Environment; Hensher, D.A., Button, K.J., Eds.; Elsevier: Amsterdam, The Netherlands, pp. 227–246.

Stern, P.C., Dietz, T., Abel, T., Guagnano, G.A., Kalof, L., 1999. A value-belief-norm theory of support for social movements: the case of environmentalism. *Human Ecology Review*, 6, 81–97.

Vella-Broderick, D., Delbosc, A., 2011. *Measuring well-being*. In: Currie, G. (Ed.), New Perspectives and Methods in Transport and Social Exclusion Research, ed. Emerald, Bingley.

Verhofstadt, E., Van Ootegem, L., Defloor, B., and Bleys, B. 2016. Linking individuals' ecological footprint to their subjective well-being. *Ecological economics*, *127*, 80-89.

Welsch, H., Binder, M., and Blankenberg, A. K. 2021. Green behavior, green self-image, and subjective well-being: Separating affective and cognitive relationships. *Ecological Economics*, *179*, 106854.

Wen, L. M., Orr, N., Millett, C., and Rissel, C. (2006). Driving to work and overweight and obesity: findings from the 2003 New South Wales Health Survey, Australia. *International Journal of Obesity*, *30*, 782-786.

Wener, R. E., and Evans, G. W. (2011). Comparing stress of car and train commuters. *Transportation research part F: traffic psychology and behaviour*, 14, 111-116.

World Health Organization. (2006). *Air quality guidelines: global update 2005: particulate matter, ozone, nitrogen dioxide, and sulfur dioxide*. World Health Organization.

Zhu, J., and Fan, Y. (2018). Daily travel behavior and emotional well-being: Effects of trip mode, duration, purpose, and companionship. *Transportation Research Part A: Policy and Practice*, 118, 360-373.

Table 1. Descriptive Statistics by Travel Category

	Paid work		**Unpaid work**		**Personal care**		**Childcare**		**Leisure**	
	Mean	Std. Dev.	Mean	Std. Dev.	Mean	Std. Dev.	Mean	Std. Dev.	Mean	Std. Dev.
time in travel category (in minutes)	21.61	18.46	18.23	15.93	18.34	14.17	18.37	14.39	24.83	26.55
private mode of transport	0.64	0.48	0.76	0.43	0.79	0.41	0.58	0.49	0.55	0.50
public mode of transport	0.17	0.37	0.07	0.26	0.05	0.21	0.11	0.31	0.15	0.35
physical mode of transport	0.19	0.40	0.17	0.38	0.17	0.37	0.31	0.46	0.30	0.46
enjoyment in travel activities	4.61	1.50	5.00	1.40	5.18	1.35	4.99	1.45	5.35	1.41
Number of episodes	5,734		9,499		1,510		2,915		10,272	

Note: Sample consists of travel episodes of all individuals from the UKTUS 2014-2015. The level of enjoyment experienced by individuals in each episode is scaled from 1 ("not at all") to 7 ("very much").

Table 2. Average Enjoyment Levels by Mode of Transport

	Paid work		**Unpaid work**		**Personal care**		**Childcare**		**Leisure**	
	Mean	S.D.	Mean	S.D.	Mean	S.D.	Mean	S.D.	Mean	S.D.
mode of transport										
private	4.65	0.02	4.99	0.02	5.15	0.04	5.10	0.03	5.28	0.02
public	4.21	0.05	4.71	0.06	4.70	0.15	4.28	0.09	4.95	0.04
physical	4.82	0.04	5.16	0.03	5.49	0.08	5.03	0.05	5.69	0.02
Number of individuals	1,188		1,502		229		538		1,129	
Number of episodes	5,734		9,499		1,510		2,915		10,272	

Note: Sample consists of travel episodes of all individuals from the UKTUS 2014-2015. The level of enjoyment experienced by individuals in each episode is scaled from 1 ("not at all") to 7 ("very much").

Table 3. OLS Regression of the Level of Enjoyment by Travel Category

	Paid work		Unpaid work		Personal care		Childcare		Leisure	
Panel (A)										
public mode of transport	-0.252***	(0.059)	-0.220***	(0.069)	-0.198	(0.183)	-0.262*	(0.138)	-0.152***	(0.053)
physical mode of transport	0.128**	(0.051)	0.151***	(0.043)	0.277***	(0.092)	0.183***	(0.065)	0.315***	(0.033)
episode-level and demographic controls	Yes		Yes		Yes		Yes		Yes	
R-squared	0.064		0.065		0.116		0.131		0.103	
Panel (B)										
public mode of transport	-0.187***	(0.049)	-0.173***	(0.052)	-0.132	(0.134)	-0.249**	(0.126)	-0.174***	(0.043)
physical mode of transport	0.160***	(0.040)	0.165***	(0.034)	0.304***	(0.072)	0.121**	(0.052)	0.315***	(0.027)
average enjoyment non-travel ep.	0.604***	(0.020)	0.676***	(0.015)	0.692***	(0.035)	0.633***	(0.028)	0.609***	(0.017)
episode-level and demographic controls	Yes		Yes		Yes		Yes		Yes	
R-squared	0.305		0.366		0.378		0.357		0.334	
Panel (C)										
public mode of transport	-0.186***	(0.049)	-0.166***	(0.052)	-0.121	(0.135)	-0.258**	(0.126)	-0.172***	(0.043)
physical mode of transport	0.159***	(0.040)	0.165***	(0.034)	0.304***	(0.072)	0.116**	(0.052)	0.314***	(0.027)
average enjoyment non-travel ep.	0.503	(0.398)	0.124	(0.302)	0.110	(0.662)	0.431	(0.410)	0.339	(0.316)
total time in non-travel episodes (in log)	-0.043	(0.287)	-0.363	(0.236)	-0.525	(0.540)	-0.216	(0.319)	-0.191	(0.257)
average enjoyment * total time non-travel	0.014	(0.056)	0.078*	(0.043)	0.083	(0.094)	0.030	(0.059)	0.039	(0.045)
episode-level and demographic controls	Yes		Yes		Yes		Yes		Yes	
R-squared	0.305		0.367		0.379		0.358		0.334	
Panel (D)										
public mode of transport	-0.201***	(0.049)	-0.170***	(0.054)	-0.146	(0.140)	-0.240**	(0.122)	-0.172***	(0.043)
physical mode of transport	0.144***	(0.039)	0.165***	(0.035)	0.314***	(0.074)	0.129**	(0.053)	0.319***	(0.027)
weighted average enjoyment non-travel ep.	0.603***	(0.019)	0.640***	(0.016)	0.661***	(0.035)	0.602***	(0.029)	0.597***	(0.017)
episode-level and demographic controls	Yes		Yes		Yes		Yes		Yes	
R-squared	0.312		0.335		0.357		0.341		0.323	
Number of episodes	5,734		9,499		1,510		2,915		10,272	

Note: Sample consists of travel episodes of all individuals from the UKTUS 2014-2015. Dependent variable is the level of enjoyment experienced by individuals in each episode scaled from 1 ("not at all") to 7 ("very much"). Dependent variable is standardized (z-score rescaled). Regressions at the episode level and by travel category. Regressions include additional episode controls: time duration (in log of minutes) and its square, presence of others during the activity and an indicator for travel during a weekday. Demographic controls at the individual-level: age (and its square), employment status, education level (if secondary or university), gender, native, living in couple, household size and number of children in the households of the respondent. Full set of estimates is reported in Table A.3 of Appendix. Regressions include region, month and year indicators. Robust standard errors clustered at the individual level in parentheses.

* Significant at the 90% level. ** Significant at the 95% level. *** Significant at the 99% level.

Table 4. RE Regression of the Level of Enjoyment by Travel Category

	Paid work		Unpaid work		Personal care		Childcare		Leisure	
Panel (A)										
public mode of transport	-0.150***	(0.046)	-0.058	(0.054)	-0.047	(0.141)	-0.093	(0.080)	-0.036	(0.043)
physical mode of transport	0.087**	(0.039)	0.172***	(0.040)	0.209**	(0.082)	0.077	(0.051)	0.330***	(0.029)
episode-level and demographic controls	Yes		Yes		Yes		Yes		Yes	
R-squared	0.049		0.056		0.092		0.118		0.099	
Panel (B)										
public mode of transport	-0.139***	(0.042)	-0.070	(0.046)	-0.058	(0.129)	-0.144*	(0.076)	-0.070*	(0.039)
physical mode of transport	0.116***	(0.034)	0.173***	(0.036)	0.244***	(0.070)	0.071	(0.046)	0.327***	(0.026)
average enjoyment non-travel ep.	0.601***	(0.018)	0.641***	(0.016)	0.681***	(0.036)	0.616***	(0.028)	0.595***	(0.016)
episode-level and demographic controls	Yes		Yes		Yes		Yes		Yes	
R-squared	0.305		0.363		0.374		0.354		0.337	
Panel (C)										
public mode of transport	-0.139***	(0.042)	-0.065	(0.046)	-0.052	(0.129)	-0.150**	(0.076)	-0.069*	-0.139***
physical mode of transport	0.115***	(0.034)	0.174***	(0.036)	0.245***	(0.070)	0.068	(0.046)	0.327***	0.115***
average enjoyment non-travel ep.	0.593**	(0.302)	0.466*	(0.250)	0.427	(0.594)	0.195	(0.388)	0.334	0.593**
total time in non-travel episodes (in log)	0.031	(0.226)	-0.072	(0.202)	-0.288	(0.487)	-0.373	(0.302)	-0.184	0.031
average enjoyment * total time non-travelling	0.001	(0.043)	0.025	(0.035)	0.036	(0.084)	0.061	(0.055)	0.037	0.001
episode-level and demographic controls	Yes		Yes		Yes		Yes		Yes	
R-squared	0.305		0.363		0.375		0.355		0.337	
Panel (D)										
public mode of transport	-0.145***	(0.042)	-0.062	(0.047)	-0.067	(0.131)	-0.132*	(0.077)	-0.066*	(0.039)
physical mode of transport	0.114***	(0.033)	0.177***	(0.036)	0.246***	(0.070)	0.081*	(0.046)	0.330***	(0.026)
weighted average enjoyment non-travel ep.	0.598***	(0.018)	0.594***	(0.018)	0.648***	(0.038)	0.577***	(0.028)	0.573***	(0.016)
episode-level and demographic controls	Yes		Yes		Yes		Yes		Yes	
R-squared	0.311		0.332		0.351		0.334		0.324	
Number of episodes	5,734		9,499		1,510		2,915		10,272	

Note: Sample consists of travel episodes of all individuals from the UKTUS 2014-2015. Dependent variable is the level of enjoyment experienced by individuals in each episode scaled from 1 ("not at all") to 7 ("very much"). Regressions at the episode level and by travel category. Dependent variable is standardized (z-score rescaled). Regressions include additional episode controls: time duration (in log of minutes) and its square, presence of others during the activity and an indicator for travel during a weekday. Demographic controls at the individual-level: age (and its square), employment status, education level (if secondary or university), gender, native, living in couple, household size and number of children in the households of the respondent. Full set of estimates is reported in Table A.4 of Appendix. Regressions include region, month and year indicators. Robust standard errors in parentheses.

* Significant at the 90% level. ** Significant at the 95% level. *** Significant at the 99% level.

Appendix

Table A.1. Classification of Travel Activities

travel category	activities
paid work	to/from work
	to work from home
	to work from a place other than home
unpaid work	household care
	shopping
	services
	organizational work
	informal help of others
	voluntary, civic and religious travel
	escorting an adult
	changing locality
personal care	personal business
	physical exercise
childcare	travel related to education
	escorting to/from education
	escorting a child other than education
leisure	walking and hiking
	biking, skiing and skating
	visiting friends/relatives
	other social activity
	entertainment and cultural activities
	hunting and fishing
	productive exercise
	gambling
	travel to holiday base
	day trip/just walk

Note: Travel activities from the UKTUS 2014-2015.

Table A.2. Descriptive Statistics of Socio-Demographics Characteristics

	Mean	**Std. Dev.**
age	43.90	17.56
male	0.47	0.50
secondary education	0.37	0.48
native	0.86	0.34
employed	0.67	0.47
living in couple	0.64	0.48
household size	2.94	1.38
number of children < 18	0.65	0.97
enjoyment in non-travel activities	5.47	0.81
weighted enjoyment in non- travel activities	5.50	0.81
Number of individuals	4,586	

Note: Sample consists of travel episodes of all individuals from the UKTUS 2014-2015.

Table A.3. OLS Full Set of Estimates of Table 3, Panel (A)

	Paid work	Unpaid work	Personal care	Childcare	Leisure
public mode of transport	-0.252***	-0.220***	-0.198	-0.262*	-0.152***
	(0.059)	(0.069)	(0.183)	(0.138)	(0.053)
physical mode of transport	0.128**	0.151***	0.277***	0.183***	0.315***
	(0.051)	(0.043)	(0.092)	(0.065)	(0.033)
episode time (in log)	0.378	0.283	-0.371	-0.511	0.009
	(0.248)	(0.192)	(0.541)	(0.341)	(0.140)
episode time squared (in log)	-0.073*	-0.044	0.050	0.086	0.002
	(0.040)	(0.031)	(0.090)	(0.055)	(0.022)
alone	0.023	-0.124**	0.031	-0.056	-0.207***
	(0.132)	(0.056)	(0.128)	(0.080)	(0.056)
with spouse	0.096	0.089*	0.206*	0.149**	0.068
	(0.131)	(0.053)	(0.115)	(0.074)	(0.050)
with parents	0.014	0.197**	-0.261*	0.214	0.045
	(0.199)	(0.099)	(0.158)	(0.146)	(0.073)
with child	-0.048	0.090	-0.142	0.026	0.026
	(0.141)	(0.058)	(0.145)	(0.065)	(0.057)
with other family member	0.001	0.192***	0.253**	0.061	0.118**
	(0.121)	(0.055)	(0.127)	(0.066)	(0.056)
with non-family	0.199	0.257***	0.182	0.134*	0.194***
	(0.129)	(0.054)	(0.116)	(0.073)	(0.045)
if travelling during weekday	-0.041	-0.034	-0.100	-0.079	-0.048
	(0.043)	(0.037)	(0.076)	(0.061)	(0.036)
age	-0.031***	0.003	0.002	0.008	-0.003
	(0.012)	(0.007)	(0.016)	(0.015)	(0.007)
age squared	0.000***	-0.000	0.000	-0.000	0.000*
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
if male	-0.062	-0.047	-0.084	-0.057	-0.087**
	(0.044)	(0.038)	(0.073)	(0.065)	(0.038)
if secondary	0.110**	0.157***	0.240***	0.124*	0.155***
	(0.047)	(0.040)	(0.083)	(0.063)	(0.039)
if native	-0.251***	-0.241***	-0.124	-0.203**	-0.285***
	(0.066)	(0.062)	(0.107)	(0.087)	(0.060)
if employed	0.064	-0.025	0.122	0.127*	0.142***
	(0.117)	(0.047)	(0.111)	(0.073)	(0.050)
if living in couple	-0.053	-0.034	0.065	0.143	-0.043
	(0.056)	(0.049)	(0.104)	(0.099)	(0.050)
household size	0.018	-0.052**	-0.086**	-0.112***	0.004
	(0.026)	(0.026)	(0.034)	(0.033)	(0.023)
number of children	0.056*	0.030	0.113**	0.066	0.002
	(0.033)	(0.030)	(0.054)	(0.043)	(0.033)
Constant	0.270	-0.362	0.650	1.088*	0.085
	(0.491)	(0.362)	(0.905)	(0.597)	(0.304)
Observations	5,734	9,499	1,510	2,915	10,272
R-squared	0.064	0.065	0.116	0.131	0.103

Note: Sample consists of travel episodes of all individuals from the UKTUS 2014-2015. Dependent variable is the level of enjoyment experienced by individuals in each episode scaled from 1 ("not at all") to 7 ("very much"). Dependent variable is standardized (z-score rescaled). Regressions at the episode level and by travel category. Regressions include region, month and year indicators. Robust standard errors clustered at the individual level in parentheses.
* Significant at the 90% level. ** Significant at the 95% level. *** Significant at the 99% level.

Table A.3 (Cont.). OLS Full Set of Estimates of Table 3, Panel (B)

	Paid work	Unpaid work	Personal care	Childcare	Leisure
public mode of transport	-0.187***	-0.173***	-0.132	-0.249**	-0.174***
	(0.049)	(0.052)	(0.134)	(0.126)	(0.043)
physical mode of transport	0.160***	0.165***	0.304***	0.121**	0.315***
	(0.040)	(0.034)	(0.072)	(0.052)	(0.027)
average enjoyment non-travel	0.604***	0.676***	0.692***	0.633***	0.609***
	(0.020)	(0.015)	(0.035)	(0.028)	(0.017)
episode time (in log)	0.540**	0.270*	-0.277	-0.447	0.000
	(0.228)	(0.152)	(0.456)	(0.320)	(0.119)
episode time squared (in log)	-0.097***	-0.047*	0.029	0.067	-0.001
	(0.037)	(0.025)	(0.076)	(0.053)	(0.018)
alone	-0.025	-0.146***	-0.064	-0.168**	-0.199***
	(0.101)	(0.044)	(0.112)	(0.069)	(0.044)
with spouse	0.101	-0.028	0.091	0.011	-0.017
	(0.099)	(0.040)	(0.095)	(0.059)	(0.038)
with parents	-0.002	0.103	-0.197	0.178	0.007
	(0.134)	(0.076)	(0.159)	(0.115)	(0.067)
with child	0.004	0.025	-0.226*	-0.003	0.022
	(0.106)	(0.044)	(0.127)	(0.053)	(0.043)
with other family member	0.025	0.088**	0.150	-0.079	0.044
	(0.093)	(0.042)	(0.119)	(0.053)	(0.046)
with non-family	0.100	0.165***	0.126	0.048	0.144***
	(0.098)	(0.040)	(0.109)	(0.058)	(0.035)
if travelling during weekday	0.003	-0.011	-0.030	-0.065	0.006
	(0.032)	(0.026)	(0.059)	(0.046)	(0.028)
age	-0.011	0.014***	0.018	0.028***	0.008
	(0.009)	(0.005)	(0.012)	(0.011)	(0.005)
age squared	0.000	-0.000**	-0.000	-0.000*	-0.000
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
if male	-0.012	-0.047*	-0.087	-0.045	-0.040
	(0.033)	(0.027)	(0.056)	(0.053)	(0.029)
if secondary	-0.033	0.033	0.180***	-0.007	0.082***
	(0.035)	(0.028)	(0.064)	(0.046)	(0.030)
if native	0.011	-0.023	-0.019	0.053	-0.098**
	(0.051)	(0.045)	(0.082)	(0.066)	(0.047)
if employed	0.053	-0.000	0.063	0.035	0.055
	(0.107)	(0.033)	(0.083)	(0.055)	(0.036)
if living in couple	-0.000	-0.047	-0.069	0.125	-0.038
	(0.045)	(0.033)	(0.078)	(0.081)	(0.040)
household size	-0.002	-0.024	-0.079***	-0.036	-0.012
	(0.020)	(0.020)	(0.029)	(0.026)	(0.019)
number of children	0.047*	0.027	0.122***	0.035	0.023
	(0.026)	(0.023)	(0.043)	(0.034)	(0.027)
Constant	-3.834***	-4.431***	-3.514***	-3.001***	-3.436***
	(0.415)	(0.291)	(0.802)	(0.575)	(0.281)
Observations	5,734	9,499	1,510	2,915	10,272
R-squared	0.305	0.366	0.378	0.357	0.334

Note: Sample consists of travel episodes of all individuals from the UKTUS 2014-2015. Dependent variable is the level of enjoyment experienced by individuals in each episode scaled from 1 ("not at all") to 7 ("very much"). Dependent variable is standardized (z-score rescaled). Regressions at the episode level and by travel category. Regressions include region, month and year indicators. Robust standard errors clustered at the individual level in parentheses.

* Significant at the 90% level. ** Significant at the 95% level. *** Significant at the 99% level.

Table A.3 (Cont.). OLS Full Set of Estimates of Table 3, Panel (C)

	Paid work	Unpaid work	Personal care	Childcare	Leisure
public mode of transport	-0.186***	-0.166***	-0.121	-0.258**	-0.172***
	(0.049)	(0.052)	(0.135)	(0.126)	(0.043)
physical mode of transport	0.159***	0.165***	0.304***	0.116**	0.314***
	(0.040)	(0.034)	(0.072)	(0.052)	(0.027)
average enjoyment non-travel	0.503	0.124	0.110	0.431	0.339
	(0.398)	(0.302)	(0.662)	(0.410)	(0.316)
total time in non-travel (in log)	-0.043	-0.363	-0.525	-0.216	-0.191
	(0.287)	(0.236)	(0.540)	(0.319)	(0.257)
average enjoyment * total time	0.014	0.078*	0.083	0.030	0.039
	(0.056)	(0.043)	(0.094)	(0.059)	(0.045)
episode time (in log)	0.516**	0.240	-0.223	-0.414	-0.012
	(0.228)	(0.152)	(0.455)	(0.322)	(0.121)
episode time squared (in log)	-0.094**	-0.043*	0.021	0.062	0.001
	(0.037)	(0.025)	(0.076)	(0.053)	(0.018)
alone	-0.026	-0.150***	-0.054	-0.166**	-0.201***
	(0.100)	(0.044)	(0.113)	(0.069)	(0.044)
with spouse	0.097	-0.029	0.093	0.011	-0.017
	(0.098)	(0.040)	(0.095)	(0.059)	(0.038)
with parents	-0.005	0.105	-0.193	0.175	0.006
	(0.134)	(0.076)	(0.159)	(0.115)	(0.066)
with child	0.003	0.021	-0.236*	-0.002	0.019
	(0.106)	(0.044)	(0.128)	(0.053)	(0.043)
with other family member	0.025	0.089**	0.153	-0.077	0.043
	(0.093)	(0.042)	(0.120)	(0.053)	(0.046)
with non-family	0.098	0.164***	0.130	0.050	0.142***
	(0.098)	(0.040)	(0.110)	(0.058)	(0.035)
if travelling during weekday	0.004	-0.011	-0.031	-0.069	0.007
	(0.032)	(0.026)	(0.059)	(0.046)	(0.029)
age	-0.011	0.014***	0.018	0.029***	0.008
	(0.009)	(0.005)	(0.012)	(0.011)	(0.005)
age squared	0.000	-0.000**	-0.000	-0.000*	-0.000
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
if male	-0.011	-0.047*	-0.086	-0.047	-0.039
	(0.033)	(0.027)	(0.056)	(0.053)	(0.029)
if secondary	-0.033	0.033	0.178***	-0.006	0.084***
	(0.035)	(0.028)	(0.064)	(0.046)	(0.029)
if native	0.011	-0.027	-0.024	0.053	-0.098**
	(0.051)	(0.044)	(0.081)	(0.066)	(0.047)
if employed	0.047	-0.000	0.063	0.037	0.055
	(0.107)	(0.033)	(0.083)	(0.056)	(0.036)
if living in couple	-0.000	-0.049	-0.057	0.135	-0.039
	(0.045)	(0.033)	(0.078)	(0.082)	(0.040)
household size	-0.001	-0.024	-0.082***	-0.035	-0.012
	(0.020)	(0.019)	(0.029)	(0.026)	(0.019)
number of children	0.046*	0.026	0.123***	0.035	0.023
	(0.026)	(0.023)	(0.044)	(0.035)	(0.027)
Constant	-3.484*	-1.814	0.080	-1.578	-2.090
	(2.069)	(1.672)	(3.853)	(2.305)	(1.834)
Observations	5,734	9,499	1,510	2,915	10,272
R-squared	0.305	0.367	0.379	0.358	0.334

Note: Sample consists of travel episodes of all individuals from the UKTUS 2014-2015. Dependent variable is the level of enjoyment experienced by individuals in each episode scaled from 1 ("not at all") to 7 ("very much"). Dependent variable is standardized (z-score rescaled). Regressions at the episode level and by travel category. Regressions include region, month and year indicators. Robust standard errors clustered at the individual level in parentheses.

* Significant at the 90% level. ** Significant at the 95% level. *** Significant at the 99% level.

Table A.3 (Cont.). OLS Full Set of Estimates of Table 3, Panel (D)

	Paid work	Unpaid work	Personal care	Childcare	Leisure
public mode of transport	-0.201***	-0.170***	-0.146	-0.240**	-0.172***
	(0.049)	(0.054)	(0.140)	(0.122)	(0.043)
physical mode of transport	0.144***	0.165***	0.314***	0.129**	0.319***
	(0.039)	(0.035)	(0.074)	(0.053)	(0.027)
weighted average enjoyment non-travel	0.603***	0.640***	0.661***	0.602***	0.597***
	(0.019)	(0.016)	(0.035)	(0.029)	(0.017)
episode time (in log)	0.528**	0.289*	-0.329	-0.416	0.024
	(0.215)	(0.156)	(0.459)	(0.320)	(0.119)
episode time squared (in log)	-0.094***	-0.049*	0.038	0.062	-0.005
	(0.035)	(0.025)	(0.076)	(0.053)	(0.018)
alone	-0.021	-0.142***	-0.041	-0.159**	-0.192***
	(0.102)	(0.045)	(0.112)	(0.069)	(0.044)
with spouse	0.102	-0.022	0.102	0.048	-0.018
	(0.100)	(0.041)	(0.096)	(0.062)	(0.039)
with parents	0.018	0.125	-0.216	0.187	0.014
	(0.135)	(0.086)	(0.164)	(0.120)	(0.068)
with child	0.023	0.010	-0.225*	-0.004	0.015
	(0.107)	(0.046)	(0.127)	(0.055)	(0.043)
with other family member	-0.012	0.082*	0.150	-0.094*	0.047
	(0.094)	(0.044)	(0.118)	(0.055)	(0.046)
with non-family	0.100	0.166***	0.174	0.062	0.146***
	(0.099)	(0.042)	(0.110)	(0.060)	(0.036)
if travelling during weekday	0.003	-0.011	-0.033	-0.063	-0.003
	(0.032)	(0.027)	(0.060)	(0.047)	(0.029)
age	-0.012	0.012**	0.014	0.023**	0.007
	(0.009)	(0.005)	(0.012)	(0.011)	(0.005)
age squared	0.000	-0.000*	-0.000	-0.000	-0.000
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
if male	0.003	-0.041	-0.083	-0.045	-0.030
	(0.032)	(0.028)	(0.058)	(0.053)	(0.029)
if secondary	-0.020	0.045	0.187***	0.011	0.091***
	(0.034)	(0.029)	(0.065)	(0.048)	(0.030)
if native	-0.013	-0.043	-0.027	0.023	-0.115**
	(0.050)	(0.046)	(0.084)	(0.065)	(0.048)
if employed	0.125	0.014	0.096	0.078	0.072**
	(0.105)	(0.036)	(0.084)	(0.056)	(0.037)
if living in couple	0.011	-0.049	-0.071	0.119	-0.048
	(0.045)	(0.034)	(0.082)	(0.079)	(0.040)
household size	0.006	-0.026	-0.078***	-0.050*	-0.009
	(0.020)	(0.020)	(0.029)	(0.026)	(0.019)
number of children	0.044*	0.030	0.122***	0.039	0.019
	(0.026)	(0.023)	(0.044)	(0.034)	(0.027)
Constant	-3.819***	-4.238***	-3.350***	-2.790***	-3.363***
	(0.400)	(0.305)	(0.814)	(0.579)	(0.280)
Observations	5,734	9,499	1,510	2,915	10,272
R-squared	0.312	0.335	0.357	0.341	0.323

Note: Sample consists of travel episodes of all individuals from the UKTUS 2014-2015. Dependent variable is the level of enjoyment experienced by individuals in each episode scaled from 1 ("not at all") to 7 ("very much"). Dependent variable is standardized (z-score rescaled). Regressions at the episode level and by travel category. Regressions include region, month and year indicators. Robust standard errors clustered at the individual level in parentheses.
* Significant at the 90% level. ** Significant at the 95% level. *** Significant at the 99% level.

Table A.4. FE Full Set of Estimates of Table 4, Panel (A)

	Paid Work	Unpaid work	Personal care	Childcare	Leisure
public mode of transport	-0.150***	-0.058	-0.047	-0.093	-0.036
	(0.046)	(0.054)	(0.141)	(0.080)	(0.043)
physical mode of transport	0.087**	0.172***	0.209**	0.077	0.330***
	(0.039)	(0.040)	(0.082)	(0.051)	(0.029)
episode time (in log)	0.269	0.248*	-0.312	-0.272	-0.019
	(0.205)	(0.139)	(0.409)	(0.257)	(0.108)
episode time squared (in log)	-0.045	-0.038*	0.039	0.044	0.003
	(0.034)	(0.023)	(0.066)	(0.042)	(0.017)
alone	-0.071	-0.156***	-0.040	-0.167***	-0.171***
	(0.110)	(0.045)	(0.116)	(0.063)	(0.042)
with spouse	0.117	0.042	0.149	0.127*	0.065*
	(0.105)	(0.043)	(0.112)	(0.069)	(0.036)
with parents	-0.070	0.120	-0.232	0.182	0.028
	(0.160)	(0.093)	(0.146)	(0.129)	(0.064)
with child	-0.071	0.007	0.045	-0.027	0.009
	(0.109)	(0.049)	(0.124)	(0.059)	(0.044)
with other family member	-0.071	0.076	0.131	0.018	0.080**
	(0.100)	(0.046)	(0.121)	(0.046)	(0.038)
with non-family	0.067	0.204***	0.191*	0.166***	0.251***
	(0.108)	(0.044)	(0.111)	(0.055)	(0.033)
if travelling during weekday	-0.011	-0.009	-0.114	-0.052	-0.033
	(0.037)	(0.032)	(0.072)	(0.052)	(0.030)
age	-0.025***	-0.000	0.001	0.003	-0.001
	(0.010)	(0.006)	(0.015)	(0.013)	(0.006)
age squared	0.000***	0.000	0.000	0.000	0.000
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
if male	-0.127***	-0.107***	-0.064	-0.065	-0.085***
	(0.037)	(0.032)	(0.070)	(0.055)	(0.031)
if secondary	0.104**	0.128***	0.256***	0.085	0.131***
	(0.040)	(0.034)	(0.076)	(0.058)	(0.033)
if native	-0.239***	-0.269***	-0.234**	-0.290***	-0.226***
	(0.058)	(0.053)	(0.103)	(0.075)	(0.048)
if employed	-0.005	0.006	0.141	0.112*	0.106***
	(0.112)	(0.041)	(0.106)	(0.063)	(0.040)
if living in couple	-0.029	-0.043	0.005	0.146*	-0.007
	(0.047)	(0.042)	(0.093)	(0.082)	(0.042)
household size	0.022	-0.042**	-0.073**	-0.121***	-0.003
	(0.021)	(0.021)	(0.033)	(0.028)	(0.017)
number of children	0.038	0.039	0.102**	0.085**	0.016
	(0.028)	(0.026)	(0.052)	(0.035)	(0.025)
Constant	0.207	-0.248	0.682	0.974*	0.092
	(0.407)	(0.294)	(0.744)	(0.501)	(0.249)
Observations	5,734	9,499	1,510	2,915	10,272
R-squared	0.049	0.056	0.092	0.118	0.099

Note: Sample consists of travel episodes of all individuals from the UKTUS 2014-2015. Dependent variable is the level of enjoyment experienced by individuals in each episode scaled from 1 ("not at all") to 7 ("very much"). Dependent variable is standardized (z-score rescaled). Regressions at the episode level and by travel category. Regressions include region, month and year indicators. Robust standard errors in parentheses.

* Significant at the 90% level. ** Significant at the 95% level. *** Significant at the 99% level.

Table A.4 (Cont.). FE Full Set of Estimates of Table 4, Panel (B)

	Paid work	Unpaid work	Personal care	Childcare	Leisure
public mode of transport	-0.139***	-0.070	-0.058	-0.144*	-0.070*
	(0.042)	(0.046)	(0.129)	(0.076)	(0.039)
physical mode of transport	0.116***	0.173***	0.244***	0.071	0.327***
	(0.034)	(0.036)	(0.070)	(0.046)	(0.026)
average enjoyment non-travel	0.601***	0.641***	0.681***	0.616***	0.595***
	(0.018)	(0.016)	(0.036)	(0.028)	(0.016)
episode time (in log)	0.331*	0.209	-0.448	-0.282	-0.050
	(0.187)	(0.133)	(0.391)	(0.265)	(0.101)
episode time squared (in log)	-0.057*	-0.034	0.059	0.043	0.006
	(0.031)	(0.022)	(0.064)	(0.044)	(0.016)
alone	-0.049	-0.158***	-0.038	-0.190***	-0.151***
	(0.096)	(0.039)	(0.106)	(0.060)	(0.038)
with spouse	0.128	-0.028	0.133	0.053	0.013
	(0.092)	(0.038)	(0.099)	(0.057)	(0.031)
with parents	-0.023	0.088	-0.190	0.178	0.011
	(0.128)	(0.077)	(0.158)	(0.123)	(0.055)
with child	-0.060	-0.022	-0.058	-0.023	0.001
	(0.097)	(0.044)	(0.113)	(0.053)	(0.037)
with other family member	-0.027	0.055	0.111	-0.044	0.045
	(0.086)	(0.041)	(0.114)	(0.043)	(0.033)
with non-family	0.066	0.162***	0.183*	0.115**	0.207***
	(0.094)	(0.038)	(0.105)	(0.051)	(0.030)
if travelling during weekday	0.010	-0.006	-0.037	-0.067	0.009
	(0.029)	(0.024)	(0.057)	(0.041)	(0.024)
age	-0.009	0.010**	0.014	0.022**	0.007
	(0.008)	(0.004)	(0.012)	(0.010)	(0.005)
age squared	0.000	-0.000	-0.000	-0.000	0.000
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
if male	-0.062**	-0.080***	-0.058	-0.080*	-0.064***
	(0.029)	(0.024)	(0.054)	(0.045)	(0.024)
if secondary	-0.034	0.019	0.164***	0.006	0.064**
	(0.032)	(0.026)	(0.062)	(0.045)	(0.025)
if native	-0.016	-0.054	-0.049	-0.028	-0.069*
	(0.045)	(0.041)	(0.081)	(0.058)	(0.038)
if employed	0.040	0.016	0.108	0.049	0.055*
	(0.094)	(0.031)	(0.080)	(0.049)	(0.032)
if living in couple	-0.001	-0.055*	-0.124	0.108*	-0.024
	(0.039)	(0.032)	(0.076)	(0.063)	(0.034)
household size	0.002	-0.029*	-0.059**	-0.056**	-0.008
	(0.017)	(0.016)	(0.029)	(0.023)	(0.014)
number of children	0.035	0.041**	0.104**	0.070**	0.018
	(0.022)	(0.020)	(0.043)	(0.027)	(0.020)
Constant	-3.606***	-4.079***	-3.197***	-2.944***	-3.359***
	(0.372)	(0.264)	(0.736)	(0.520)	(0.248)
Observations	5,734	9,499	1,510	2,915	10,272
R-squared	0.305	0.363	0.374	0.354	0.337

Note: Sample consists of travel episodes of all individuals from the UKTUS 2014-2015. Dependent variable is the level of enjoyment experienced by individuals in each episode scaled from 1 ("not at all") to 7 ("very much"). Dependent variable is standardized (z-score rescaled). Regressions at the episode level and by travel category. Regressions include region, month and year indicators. Robust standard errors in parentheses.

* Significant at the 90% level. ** Significant at the 95% level. *** Significant at the 99% level.

Table A.4 (Cont.). FE Full Set of Estimates of Table 4, Panel (C)

	Paid work	Unpaid work	Personal care	Childcare	Leisure
public mode of transport	-0.139***	-0.065	-0.052	-0.150**	-0.069*
	(0.042)	(0.046)	(0.129)	(0.076)	(0.039)
physical mode of transport	0.115***	0.174***	0.245***	0.068	0.327***
	(0.034)	(0.036)	(0.070)	(0.046)	(0.026)
average enjoyment non-travel	0.593**	0.466*	0.427	0.195	0.334
	(0.302)	(0.250)	(0.594)	(0.388)	(0.251)
total time in non-travel (in log)	0.031	-0.072	-0.288	-0.373	-0.184
	(0.226)	(0.202)	(0.487)	(0.302)	(0.204)
average enjoyment * total time	0.001	0.025	0.036	0.061	0.037
	(0.043)	(0.035)	(0.084)	(0.055)	(0.036)
episode time (in log)	0.315*	0.191	-0.414	-0.268	-0.057
	(0.187)	(0.133)	(0.392)	(0.266)	(0.101)
episode time squared (in log)	-0.055*	-0.032	0.054	0.041	0.007
	(0.031)	(0.022)	(0.064)	(0.044)	(0.016)
alone	-0.050	-0.159***	-0.028	-0.191***	-0.153***
	(0.096)	(0.039)	(0.106)	(0.060)	(0.038)
with spouse	0.124	-0.028	0.133	0.052	0.012
	(0.092)	(0.038)	(0.099)	(0.057)	(0.031)
with parents	-0.024	0.090	-0.190	0.173	0.011
	(0.128)	(0.077)	(0.157)	(0.124)	(0.055)
with child	-0.060	-0.024	-0.065	-0.023	-0.002
	(0.097)	(0.044)	(0.113)	(0.053)	(0.037)
with other family member	-0.027	0.056	0.118	-0.044	0.045
	(0.086)	(0.041)	(0.114)	(0.043)	(0.033)
with non-family	0.064	0.162***	0.188*	0.115**	0.206***
	(0.094)	(0.038)	(0.106)	(0.051)	(0.030)
if travelling during weekday	0.011	-0.005	-0.039	-0.071*	0.010
	(0.029)	(0.024)	(0.057)	(0.041)	(0.024)
age	-0.009	0.010**	0.014	0.023**	0.007
	(0.008)	(0.004)	(0.012)	(0.010)	(0.005)
age squared	0.000	-0.000	-0.000	-0.000	-0.000
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
if male	-0.062**	-0.080***	-0.060	-0.081*	-0.063**
	(0.029)	(0.024)	(0.054)	(0.045)	(0.024)
if secondary	-0.035	0.019	0.160***	0.006	0.065**
	(0.032)	(0.026)	(0.062)	(0.045)	(0.025)
if native	-0.016	-0.058	-0.052	-0.026	-0.070*
	(0.046)	(0.041)	(0.082)	(0.058)	(0.038)
if employed	0.035	0.015	0.108	0.052	0.055*
	(0.095)	(0.031)	(0.080)	(0.049)	(0.032)
if living in couple	-0.002	-0.056*	-0.112	0.115*	-0.025
	(0.039)	(0.032)	(0.077)	(0.063)	(0.034)
household size	0.003	-0.029*	-0.061**	-0.056**	-0.008
	(0.017)	(0.016)	(0.029)	(0.023)	(0.014)
number of children	0.035	0.041**	0.106**	0.072***	0.019
	(0.022)	(0.020)	(0.043)	(0.027)	(0.020)
Constant	-3.788**	-3.538**	-1.262	-0.399	-2.070
	(1.630)	(1.434)	(3.471)	(2.154)	(1.453)
Observations	5,734	9,499	1,510	2,915	10,272
R-squared	0.305	0.363	0.375	0.355	0.337

Note: Sample consists of travel episodes of all individuals from the UKTUS 2014-2015. Dependent variable is the level of enjoyment experienced by individuals in each episode scaled from 1 ("not at all") to 7 ("very much"). Dependent variable is standardized (z-score rescaled). Regressions include region, month and year indicators. Robust standard errors in parentheses.

* Significant at the 90% level. ** Significant at the 95% level. *** Significant at the 99% level.

Table A.4 (Cont.). FE Full Set of Estimates of Table 4, Panel (D)

	Paid work	Unpaid work	Personal care	Childcare	Leisure
public mode of transport	-0.145***	-0.062	-0.067	-0.132*	-0.066*
	(0.042)	(0.047)	(0.131)	(0.077)	(0.039)
physical mode of transport	0.114***	0.177***	0.246***	0.081*	0.330***
	(0.033)	(0.036)	(0.070)	(0.046)	(0.026)
weighted average enjoyment non-travel	0.598***	0.594***	0.648***	0.577***	0.573***
	(0.018)	(0.018)	(0.038)	(0.028)	(0.016)
episode time (in log)	0.324*	0.223*	-0.470	-0.283	-0.028
	(0.181)	(0.133)	(0.392)	(0.266)	(0.101)
episode time squared (in log)	-0.055*	-0.036*	0.062	0.042	0.003
	(0.030)	(0.022)	(0.064)	(0.044)	(0.016)
alone	-0.047	-0.161***	-0.025	-0.180***	-0.145***
	(0.097)	(0.040)	(0.108)	(0.061)	(0.038)
with spouse	0.139	-0.027	0.134	0.079	0.012
	(0.093)	(0.039)	(0.102)	(0.058)	(0.032)
with parents	-0.021	0.091	-0.200	0.190	0.011
	(0.129)	(0.081)	(0.164)	(0.127)	(0.056)
with child	-0.061	-0.036	-0.051	-0.018	-0.007
	(0.098)	(0.045)	(0.115)	(0.055)	(0.038)
with other family member	-0.048	0.048	0.117	-0.047	0.046
	(0.087)	(0.042)	(0.115)	(0.043)	(0.033)
with non-family	0.067	0.159***	0.207*	0.130**	0.210***
	(0.094)	(0.039)	(0.107)	(0.052)	(0.030)
if travelling during weekday	0.019	-0.009	-0.037	-0.070	0.002
	(0.029)	(0.025)	(0.058)	(0.043)	(0.024)
age	-0.008	0.008*	0.010	0.017	0.005
	(0.008)	(0.005)	(0.012)	(0.010)	(0.005)
age squared	0.000	-0.000	-0.000	-0.000	0.000
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
if male	-0.043	-0.076***	-0.047	-0.071	-0.050**
	(0.029)	(0.025)	(0.056)	(0.046)	(0.025)
if secondary	-0.019	0.033	0.168***	0.023	0.074***
	(0.031)	(0.027)	(0.062)	(0.047)	(0.026)
if native	-0.036	-0.080*	-0.056	-0.069	-0.085**
	(0.046)	(0.043)	(0.083)	(0.060)	(0.039)
if employed	0.077	0.035	0.138*	0.096*	0.072**
	(0.096)	(0.032)	(0.081)	(0.049)	(0.032)
if living in couple	0.011	-0.060*	-0.120	0.114*	-0.030
	(0.039)	(0.033)	(0.078)	(0.064)	(0.034)
household size	0.007	-0.028*	-0.061**	-0.071***	-0.006
	(0.017)	(0.017)	(0.029)	(0.024)	(0.014)
number of children	0.030	0.038*	0.101**	0.071**	0.013
	(0.022)	(0.021)	(0.044)	(0.028)	(0.021)
Constant	-3.578***	-3.792***	-3.021***	-2.638***	-3.239***
	(0.365)	(0.278)	(0.745)	(0.524)	(0.250)
Observations	5,734	9,499	1,510	2,915	10,272
R-squared	0.311	0.332	0.351	0.334	0.324

Note: Sample consists of travel episodes of all individuals from the UKTUS 2014-2015. Dependent variable is the level of enjoyment experienced by individuals in each episode scaled from 1 ("not at all") to 7 ("very much"). Dependent variable is standardized (z-score rescaled). Regressions at the episode level and by travel category. Regressions include region, month and year indicators. Robust standard errors in parentheses.

* Significant at the 90% level. ** Significant at the 95% level. *** Significant at the 99% level.

Table A.5. Robustness Check: Ordered Logit Regression of the Level of Enjoyment by Travel Category

	Paid work		Unpaid work		Personal care		Childcare		Leisure	
Panel (A)										
public mode of transport	-0.453***	(0.111)	-0.387***	(0.129)	-0.318	(0.355)	-0.497*	(0.275)	-0.250**	(0.102)
physical mode of transport	0.220**	(0.096)	0.307***	(0.080)	0.541***	(0.189)	0.356***	(0.128)	0.638***	(0.067)
episode-level and demographic controls	Yes		Yes		Yes		Yes		Yes	
Panel (B)										
public mode of transport	-0.395***	(0.107)	-0.359***	(0.122)	-0.219	(0.301)	-0.562**	(0.286)	-0.306***	(0.095)
physical mode of transport	0.341***	(0.086)	0.458***	(0.077)	0.720***	(0.183)	0.325***	(0.118)	0.789***	(0.064)
average enjoyment non-travel ep.	1.386***	(0.057)	1.621***	(0.044)	1.660***	(0.104)	1.554***	(0.081)	1.456***	(0.048)
episode-level and demographic controls	Yes		Yes		Yes		Yes		Yes	
Panel (C)										
public mode of transport	-0.395***	(0.108)	-0.349***	(0.122)	-0.194	(0.307)	-0.577**	(0.286)	-0.301***	(0.095)
physical mode of transport	0.340***	(0.086)	0.459***	(0.077)	0.719***	(0.182)	0.317***	(0.118)	0.788***	(0.064)
average enjoyment non-travel ep.	1.282	(0.896)	0.165	(0.680)	0.196	(1.744)	1.199	(0.908)	1.053	(0.720)
total time in non-travel episodes (in log)	-0.008	(0.642)	-0.977*	(0.530)	-1.307	(1.433)	-0.377	(0.693)	-0.242	(0.574)
average enjoyment * total time non-travel	0.015	(0.126)	0.207**	(0.096)	0.208	(0.248)	0.052	(0.130)	0.058	(0.103)
episode-level and demographic controls	Yes		Yes		Yes		Yes		Yes	
Panel (D)										
public mode of transport	-0.417***	(0.106)	-0.328***	(0.123)	-0.240	(0.306)	-0.518*	(0.275)	-0.310***	(0.094)
physical mode of transport	0.305***	(0.083)	0.448***	(0.077)	0.710***	(0.182)	0.340***	(0.119)	0.791***	(0.064)
weighted average enjoyment non-travelling ep.	1.392***	(0.055)	1.503***	(0.045)	1.566***	(0.103)	1.440***	(0.079)	1.406***	(0.047)
episode-level and demographic controls	Yes		Yes		Yes		Yes		Yes	
Number of episodes	5,734		9,499		1,510		2,915		10,272	

Note: Sample consists of travel episodes of all individuals from the UKTUS 2014-2015. Dependent variable is the level of enjoyment experienced by individuals in each episode scaled from 1 ("not at all") to 7 ("very much"). Dependent variable is standardized (z-score rescaled). Regressions at the episode level and by travel category. Regressions include additional episode controls: time duration (in log of minutes) and its square, presence of others during the activity and an indicator for travelling during a weekday. Demographic controls at the individual-level: age (and its square), employment status, education level (if secondary or university), gender, native, living in couple, household size and number of children in the households of the respondent. Full set of estimates available upon request. Regressions include region, month and year indicators. Robust standard errors clustered at the individual level in parentheses.

* Significant at the 90% level. ** Significant at the 95% level. *** Significant at the 99% level.

Table A.6. Robustness Check: RE Ordered Logit Regression of the Level of Enjoyment by Travel Category

	Paid work		Unpaid work		Personal care		Childcare		Leisure	
Panel (A)										
public mode of transport	-0.393***	(0.127)	-0.102	(0.159)	0.022	(0.497)	-0.213	(0.236)	-0.393***	(0.127)
physical mode of transport	0.218**	(0.111)	0.578***	(0.116)	0.786***	(0.302)	0.257*	(0.155)	0.218**	(0.111)
episode-level and demographic controls	Yes		Yes		Yes		Yes		Yes	
Panel (B)										
public mode of transport	-0.360***	(0.113)	-0.147	(0.140)	-0.009	(0.451)	-0.346	(0.223)	-0.119	(0.115)
physical mode of transport	0.302***	(0.094)	0.588***	(0.104)	0.907***	(0.262)	0.263*	(0.140)	1.077***	(0.082)
average enjoyment non-travel ep.	1.745***	(0.070)	2.051***	(0.064)	2.429***	(0.182)	1.953***	(0.109)	1.917***	(0.061)
episode-level and demographic controls	Yes		Yes		Yes		Yes		Yes	
Panel (C)										
public mode of transport	-0.358***	(0.113)	-0.131	(0.140)	0.011	(0.452)	-0.361	(0.224)	-0.116	(0.115)
physical mode of transport	0.299***	(0.094)	0.588***	(0.104)	0.909***	(0.261)	0.256*	(0.141)	1.077***	(0.082)
average enjoyment non-travel ep.	1.769*	(0.911)	1.312*	(0.789)	1.106	(2.097)	0.693	(1.245)	0.974	(0.806)
total time in non-travel episodes (in log)	0.141	(0.672)	-0.359	(0.627)	-1.320	(1.701)	-1.097	(0.955)	-0.673	(0.636)
average enjoyment * total time non-travel	-0.003	(0.129)	0.105	(0.112)	0.189	(0.299)	0.182	(0.178)	0.135	(0.115)
episode-level and demographic controls	Yes		Yes		Yes		Yes		Yes	
Panel (D)										
public mode of transport	-0.375***	(0.114)	-0.125	(0.141)	-0.042	(0.455)	-0.302	(0.226)	-0.108	(0.116)
physical mode of transport	0.299***	(0.093)	0.598***	(0.105)	0.890***	(0.259)	0.296**	(0.143)	1.084***	(0.082)
weighted average enjoyment non-travel ep.	1.750***	(0.070)	1.893***	(0.066)	2.314***	(0.185)	1.817***	(0.109)	1.822***	(0.061)
episode-level and demographic controls	Yes		Yes		Yes		Yes		Yes	
Number of episodes	5,734		9,499		1,510		2,915		10,272	

Note: Sample consists of travel episodes of all individuals from the UKTUS 2014-2015. Dependent variable is the level of enjoyment experienced by individuals in each episode scaled from 1 ("not at all") to 7 ("very much"). Dependent variable is standardized (z-score rescaled). Regressions at the episode level and by travel category. Regressions include additional episode controls: time duration (in log of minutes) and its square, presence of others during the activity and an indicator for travel during a weekday. Demographic controls at the individual-level: age (and its square), employment status, education level (if secondary or university), gender, native, living in couple, household size and number of children in the households of the respondent. Full set of estimates available upon request. Regressions include region, month and year indicators. Robust standard errors in parentheses.
* Significant at the 90% level. ** Significant at the 95% level. *** Significant at the 99% level.