



## The road to happiness: from mood during leisure trips and activities to satisfaction with life

### ABSTRACT

Over the past years an increasing number of studies have investigated the link between travel and subjective well-being (SWB), often focussing on the effects of trip characteristics on satisfaction with particular trips. Two elements not frequently addressed in this research domain are (i) how trip satisfaction affects the mood during – and the evaluation of – the activity at the destination of the trip and (ii) how travel can affect long-term well-being. As engagement in out-of-home activities can improve eudaimonic well-being – referring to meaning of life, self-development and social relationships – it is possible that travel (satisfaction) does not only affect the overall evaluation of people's lives (i.e., life satisfaction), but also eudaimonic well-being, through activity participation and satisfaction. In this study we will analyse the effect of satisfaction with leisure trips on the satisfaction with the leisure activity at the destination of the trip and look at how satisfaction with these short-term activity episodes affect both eudaimonic well-being and life satisfaction. Results of this study applying a structural equation modelling approach on 1,212 respondents from the city of Ghent (Belgium) indicate that spill-over effects exist from trip satisfaction on leisure activity satisfaction and that both these short-term satisfactions affect eudaimonic well-being and life satisfaction, whether directly or indirectly.

### 1. INTRODUCTION

Although travel options and trip characteristics can affect individuals' mood during a trip and cumulative satisfaction with trips could impact long-term life satisfaction, travel may also affect well-being in an indirect way. In travel behaviour analysis, it is acknowledged that travel is valued because it enables engagement in daily out-of-home activities. Not only do travel options determine whether or not people can participate in (preferred) activities, the travel experience can also affect the performance of – and satisfaction with – activities at the destination of the trip. Since engaging in these activities can improve peoples' personal growth, social contacts and their evaluation of life, perceived travel quality may also affect long-term happiness indirectly.

In recent years, subjective well-being (SWB) has attracted increased attention across multiple disciplines, as objective elements (such as income and health status) are not able to capture all aspects of quality of life (1, 2, 3). Although studies have started analysing how travel can affect SWB, it is not clear how it influences different types of SWB. Research in SWB mostly falls into two traditions. The hedonistic tradition focusses on short-term happiness and is generally defined as the presence of positive affect and the absence of negative affect. The eudaimonic tradition, on the other hand, focusses on living a 'full life' and actualising one's human potentials. In addition, satisfaction with life – a cognitive evaluation of a person's life in general – can be regarded as an outcome of both hedonic and eudaimonic well-being.

In this study we focus on leisure trips and activities. It can be argued that leisure activities – which can be considered as freely chosen, satisfying/enjoyable and as good opportunities to strengthen social contacts and realising certain personal goals (4) – are planned and undertaken to satisfy certain needs (e.g., Abou-zeid and Ben-Akiva, 2012). Cumulative satisfaction with leisure activities (i.e., hedonic well-being) can therefore affect both eudaimonic well-being and life satisfaction. Since the perceived quality of trips towards leisure activities might affect the execution of – and contentment with – these activities; leisure trips can influence the well-being enhancing effect of leisure activities. As travel can – in most cases – be perceived as a derived demand, i.e., to participate in spatially separated activities, travel will only contribute to eudaimonic well-being indirectly (through activity participation), although cumulative positive (or negative) moods during trips might positively (or negatively) influence peoples' life satisfaction.

109 **2. DISENTANGLING THE WELL-BEING KNOT**

110 **2.1 Hedonic well-being versus eudaimonic well-being**

111 Well-being is a rather vague and all-embracing concept, which can have various meanings for  
112 different people. SWB is considered subjective because the idea is for people to evaluate for  
113 themselves. Academics regularly assume that SWB consists of three components (3, 6): the presence  
114 of positive feelings, the absence of negative feelings and overall satisfaction with life. The first two  
115 components – often referred to as affective or hedonic components – tend to pertain to short time  
116 frames; they detect self-reported feelings or emotions during an interval or activity episode. The  
117 experience of happiness, enjoyment and/or pleasure (i.e., positive affect) through the satisfaction of  
118 various needs is often referred to as hedonic well-being (1, 7).

119  
120 Eudaimonic well-being, on the other hand, is more than preference satisfaction and emphasises on the  
121 meaning of life and achieving personal growth (1, 8). According to Aristotle's Nichomachean ethics,  
122 well-being cannot be based on the extent of pleasure experienced but derives from the enactment of  
123 such qualities as excellence, virtue and self-realisation (9). Contemporary eudaimonic understandings  
124 of well-being build on Aristotle and emphasise purpose in and meaning of life, personal growth and  
125 'flourishing' – the realisation of the best in oneself (1, 8). On this view, well-being amounts to living  
126 in ways that reflect one's 'daimon' or true self, which becomes possible by "identifying one's  
127 potential strengths and limitations and choosing those goals that provide personal meaning and  
128 purpose in life" (10). In contrast to hedonic well-being – emphasising on short-term satisfaction –  
129 eudaimonic well-being tends to pertain to the longer term.

130  
131 **2.2 Life satisfaction**

132 Life satisfaction is a cognitive evaluation of a person's life in general which tends to be rather stable  
133 over time and only gradually changes over longer periods of time (11). Although satisfaction with life  
134 is often considered as being part of hedonic well-being, life satisfaction can also be seen as an  
135 outcome of both hedonic and eudaimonic well-being. Both hedonic and eudaimonic elements like  
136 positive affect and personal growth contribute to life satisfaction (7, 12). According to (13), people  
137 with a 'full life' (having high levels of both hedonic and eudaimonic well-being) have a higher life  
138 satisfaction than people with an 'empty life' (having low levels of hedonic and eudaimonic well-  
139 being). In this paper we will regard life satisfaction separately from hedonic well-being and as an  
140 outcome of both hedonic and eudaimonic well-being.

141  
142 **2.3 Activity satisfaction and domain satisfaction versus life satisfaction**

143 Life satisfaction can be affected by the performance of – and satisfaction with – daily activities. Since  
144 people engaging in interesting or rewarding activities are likely to experience more pleasant than  
145 unpleasant emotions, frequent participation in such activities can improve life satisfaction (14,15).  
146 Furthermore, everyday activities help people to actualise their potentials and achieve personal growth  
147 and progress to their goals. It can even be argued that people plan and undertake activities to satisfy  
148 their needs and maintain or enhance well-being (5). Performing out-of-home activities and  
149 leisure/social activities seems to result in higher levels of satisfaction, compared to activities at home  
150 or more mandatory activities (16, 17).

151  
152 Life satisfaction is not only influenced by satisfaction with activity episodes, it can also be affected by  
153 satisfaction in various domains (e.g., job satisfaction). According to (18), domain satisfaction can be  
154 regarded as a fourth component of SWB, besides positive affect, negative affect and life satisfaction.  
155 Studies have indicated that this medium-term domain satisfaction is correlated with life satisfaction  
156 (18, 19). Life satisfaction can be affected by the perceived quality of certain domains in life, such as  
157 employment, health and marriage. Furthermore, satisfaction with activity episodes might also affect  
158 life satisfaction indirectly through domain satisfaction, for instance when frequent pleasant social  
159 interaction with colleagues improves job satisfaction, which in turn positively affects satisfaction with  
160 life.

161  
162 Reverse relationships are also possible: individuals with greater life satisfaction are probably more  
163 satisfied with life domains and/or enjoy activities to a greater extent. A bidirectional relationship

164 seems to occur: a bottom-up causation, where the perceived quality of performed activities and  
165 satisfaction with life domains cause a certain level of life satisfaction, and a top-down causation,  
166 where satisfaction with life produces certain levels of domain satisfaction and activity satisfaction (19,  
167 20). In this paper we will leave the top-down causation out of account and focus on the effect of  
168 activity satisfaction and domain satisfaction on life satisfaction.

169

### 170 **3. TRAVEL, LEISURE AND SWB**

#### 171 **3.1 Travel and SWB**

172 (21) and (22) provide an overview of how travel can affect SWB. Three ways in how travel can affect  
173 SWB are acknowledged in both studies, one direct way and two indirect ways. First of all, travel can  
174 affect SWB – hedonic well-being in particular – directly, through the feelings or emotions  
175 experienced during the trip and the evaluation of that trip. The mood during a trip can be affected by  
176 activities that people (can) perform during travel. Public transport users, for instance, can perform both  
177 relaxing/entertaining activities such as reading a book or listening to music (23). Second, travel  
178 enables people to participate in spatially separated out-of-home activities. Since (out-of-home) activity  
179 participation has a clear impact on life satisfaction and helps people to actualise their potentials and  
180 achieve personal growth and progress to their goals, travel can have an important indirect effect on life  
181 satisfaction and eudaimonic well-being (5, 14). In the worst case scenario of social exclusion, a lack of  
182 travel options makes it impossible to engage in rewarding activities, negatively affecting quality of life  
183 (24). Third, observed spill-over effects of travel on the activity at the destination of the trip are  
184 possible (21, 22, 25). The (perceived) quality of the trip can affect the ease with which people perform  
185 their activity at the destination of that trip. A stressful trip, for instance, might disturb the execution of  
186 – and lower the satisfaction with – the upcoming activity and can therefore reduce the activity’s well-  
187 being enhancing effect. On the other hand, travel time can give travellers the opportunity to mentally  
188 prepare for the activity ahead, facilitating the performance of the activity (26).

189

#### 190 **3.2 Leisure and SWB**

191 Leisure time can be defined as time not occupied by paid or unpaid work, personal or household  
192 chores or other obligations. Recent studies indicate that leisure is positively correlated with different  
193 types of SWB (27). Despite this positive relation, less is known about how leisure enhances SWB.  
194 Since leisure activities can be defined as (i) freely chosen and (ii) enjoyable and/or satisfying (4), a  
195 direct link between leisure activities and SWB can be expected. According to (27), leisure is a key life  
196 domain and a core ingredient for overall well-being. They state that leisure can affect SWB through  
197 five psychological mechanisms that leisure provides, such as autonomy and mastery. According to  
198 (28), leisure activities can improve SWB as they can provide eleven psychological benefits, including  
199 relaxation, creativity and self-expression. Studies have indicated that out-of-home leisure activities  
200 (e.g., visiting family or friends) are perceived more positively than in-home leisure activities (e.g.,  
201 watching television), possibly since engagement in out-of-home activities is often accompanied with  
202 social interaction (16, 17). Since leisure activities can help people in their self-development, in the  
203 realisation of personal goals and in maintaining social relationships, it is clear that participating in  
204 leisure activities does not only influence hedonic well-being and life satisfaction, but also eudaimonic  
205 well-being.

206

207 It is possible that satisfying leisure trips and activities will not only affect eudaimonic well-being (in  
208 case of leisure activities) and life satisfaction directly, but that there also exists a possible indirect  
209 effect through domain satisfaction. Satisfaction with trips might influence a global evaluation of daily  
210 travel, while satisfaction with leisure activities might affect a global evaluation of people’s leisure  
211 time. This domain satisfaction might then affect longer-term well-being (i.e., eudaimonic well-being  
212 and life satisfaction) (19).

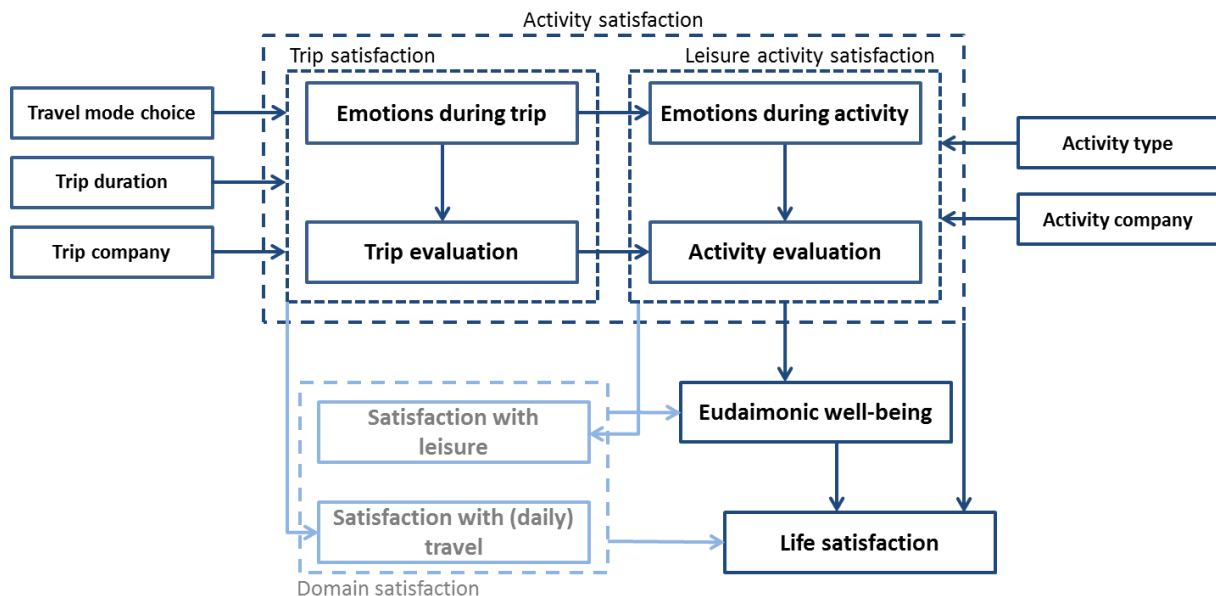
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### 214 **4. CONCEPTUAL MODEL**

215 Based on the previous literature we construct a conceptual model analysing the links between (i) trip  
216 satisfaction and leisure activity satisfaction as activity satisfaction, (ii) overall satisfaction with daily  
217 travel and leisure as domain satisfaction, (iii) eudaimonic well-being, and (iv) life satisfaction (Figure  
218 1). In the suggested model, there exist links from trip satisfaction to leisure activity satisfaction and

219 from leisure activity satisfaction to eudaimonic well-being. As travel is mostly a derived demand and  
 220 does not directly contribute to eudaimonic well-being, no direct link from trip satisfaction to  
 221 eudaimonic well-being is included. Furthermore, links have been provided from trip satisfaction,  
 222 leisure activity satisfaction and eudaimonic well-being to life satisfaction. Within trip satisfaction and  
 223 leisure activity satisfaction a link exists from the emotions experienced during the activity episode to  
 224 the cognitive evaluation of this episode. Since we do not have information on domain satisfaction of  
 225 travel and leisure (i.e., overall satisfaction with (daily) travel and leisure activities), domain  
 226 satisfaction will be kept out of analysis in the structural equation modelling approach (see Sections 6  
 227 and 7).

228  
 229 In this model, travel mode choice, trip duration and company during the trip are included as  
 230 explanatory variables of trip satisfaction. Numerous recent studies indicate that the choice of travel  
 231 mode has a significant effect on how satisfied people are with their trips. Active travel (walking in  
 232 particular) seems to result in the highest levels of trip satisfaction, while people using public transport  
 233 (bus in particular) seem least satisfied with their trips (29, 30, 31, 32). Studies also found that trip  
 234 duration tends to affect trip satisfaction negatively. With longer durations, travellers become less  
 235 enthusiastic and relaxed and evaluate the quality and efficiency of the trip lower (29, 30, 33). As  
 236 people might travel together to leisure activities, social interaction might already start during the trip  
 237 towards that activity. As a result, people travelling alone might experience their trip less positive than  
 238 people travelling together with friends and family. Furthermore, as people often participate in leisure  
 239 activities to meet and spend time with friends, family and others (27), it is also reasonable to assume  
 240 that satisfaction with leisure activities will mostly be lower for people performing such an activity  
 241 alone, compared to people performing this activity together with others. We therefore added a link  
 242 from activity company to leisure activity satisfaction. Finally, we added a link from the type of out-of-  
 243 home leisure activity to leisure activity satisfaction as previous studies have indicated that different  
 244 types of (leisure) activities result in various levels of satisfaction (15).  
 245



246  
 247 **FIGURE 1 A conceptual model outlining the relationships between travel satisfaction and**  
 248 **leisure satisfaction (both as activity satisfaction and domain satisfaction), eudaimonic well-being**  
 249 **and life satisfaction. Dark blue: elements and links analysed in this study; light blue: elements**  
 250 **and links not analysed in this study.**

251  
 252 **5. DATA**  
 253 For this study we use data from a 2012 Internet survey on travel behaviour, SWB and satisfaction with  
 254 the most recent leisure activity and the foregoing trip. Invitations with a link to the Internet survey  
 255 were distributed in twelve neighbourhoods (five urban and seven suburban neighbourhoods) within the

256 city of Ghent, Belgium (approximately 250,000 inhabitants). In total, 27,780 invitations to the Internet  
257 survey were distributed to every household in the selected neighbourhoods, covering about one fourth  
258 of all households in Ghent. Eventually, 1,807 adult persons completed the survey, of which 1,720  
259 respondents were retained after a first data cleaning. For this study we removed an additional share of  
260 respondents (see Section 5.1), resulting in 1,212 respondents. As the used sample recruitment method  
261 resulted in a rather low response rate (i.e., 6.5%) it is not possible to perform a descriptive analysis of  
262 the total population of the selected neighbourhoods. However, since the main goal of this study is an  
263 analytical representation of relationships among multiple variables it is more important to have a large  
264 and sufficiently diverse sample (34). Since our sample size is large enough (even after removing a  
265 substantial share of respondents) coefficients to characterise specific relationships can be estimated  
266 with great confidence. For more information on the neighbourhood selection, sample recruitment and  
267 representativeness, see (29).

268  
269 In this study we use cross-sectional data, measuring respondents' experiences at one point in time.  
270 Since our model tries to measure how short-term satisfaction (with specific trips and leisure activities)  
271 affects long-term life satisfaction and eudaimonic well-being, longitudinal data (i.e., repeated  
272 observations of the same variables over a certain period of time) would have been most appropriate.  
273 Doing so would have made it possible to analyse whether multiple satisfying (or dissatisfying) trips  
274 and/or activity episodes over time could positively (or negatively) affect peoples' eudaimonic well-  
275 being and evaluation of life. However, within travel behaviour research (but also in other domains)  
276 there is a limited availability of longitudinal data, as they are expensive, time consuming and impose a  
277 high respondent burden. Although the lack of longitudinal data in this study is a clear limitation, we do  
278 think that the cross-sectional data used in our model gives an indication of how (i) trip satisfaction and  
279 leisure activity satisfaction, (ii) eudaimonic well-being and (iii) life satisfaction are related with each  
280 other at a certain point in time.

## 281 282 **5.1. Key variables**

283 In this section we analyse the key variables of the model outlined in Figure 2. It has to be noted that  
284 satisfaction with the most recent out-of-home leisure activity and satisfaction with the trip to this  
285 activity are measured retrospectively. In retrospective measurements, (i) remembered frequency,  
286 duration and intensity of positive and negative affect (i.e., remembered mood) or (ii) a global  
287 perception of the quality and efficiency (i.e., cognitive evaluation) of a past activity episode are  
288 reported. This type of measurement could create memory distortions that affect the delayed recall and  
289 evaluation of experiences (15) or may cause skewing of memories of 'average' trips by extreme or  
290 unusual circumstances. In order to minimise these effects, we removed respondents indicating that  
291 they performed their most recent leisure trip and activity more than two days before filling in the  
292 survey. This resulted in retaining 1,212 respondents who performed their most recent leisure activity  
293 and foregoing trip the day of filling in the survey, the day before or two days before.

### 294 295 *5.1.1 Trip satisfaction*

296 In the used survey we asked respondents how they experienced the trip to their most recent out-of-  
297 home leisure activity. In order to measure people's trip satisfaction we used the Satisfaction with  
298 Travel Scale (STS) (30, 31, 35). This scale measures the mood (i.e., feelings and emotions) travellers  
299 experience during a trip and how they evaluate the trip being made. The affective feelings measured  
300 by this scale are based on two dimensions (i.e., valence: ranging from unpleasant to pleasant; and  
301 activation: ranging from deactivation to activation), which are assessed by the Swedish Core Affect  
302 Scale (SCAS) (36), and consists of six items. The endpoints of each item are combinations of the  
303 valence and activation dimensions. Three items range from negative deactivation to positive activation  
304 (i.e., bored - enthusiastic; tired - alert; fed up - engaged) and the other three from negative activation to  
305 positive deactivation (i.e., stressed - calm; worried - confident; hurried - relaxed). A cognitive  
306 evaluation of the trip being made is measured by three additional items that refer to the general quality  
307 and efficiency of the trip (i.e., the trip was the worst - best I can think of; the trip was low - high  
308 standard; the trip did not work out - worked out well). For all the nine scales, scores vary from -3 to 3  
309 with a higher score implying higher satisfaction.

310 In this study we subdivide the affective component of travel satisfaction (i.e., emotions during the trip)  
311 from the cognitive component of travel satisfaction (i.e., evaluation of the trip made). Since the  
312 internal consistency (i.e., the average correlation of a scale's items) of the six scales measuring  
313 emotions during the trip and the three scales measuring the cognitive evaluation of the trip are  
314 assessed as good (Cronbach's alpha is respectively 0.89 and 0.87), we created a positive emotion  
315 variable by averaging the six scales measuring the affective emotions and a positive evaluation  
316 variable by averaging the three scales measuring cognitive evaluation. The average scores on the  
317 positive emotion variable and positive evaluation variable are 1.18 and 1.40 respectively, indicating  
318 that respondents are fairly satisfied with the trip to their most recent leisure activity.

319

#### 320 *5.1.2 Leisure activity satisfaction*

321 In order to measure how satisfied respondents were with their most recent out-of-home leisure activity  
322 we applied a comparable scale as the STS, but applied on the leisure activity instead of on the trip.  
323 This scale (i.e., Satisfaction with Activity Scale (SAS)) therefore also contains six items analysing the  
324 experienced mood during the (leisure) activity, ranging from negative to positive emotions with  
325 varying levels of activation (i.e., bored - enthusiastic; tired - alert; fed up - engaged; stressed - calm;  
326 worried - confident; hurried - relaxed). A cognitive evaluation of the leisure activity made is measured  
327 by five items that refer to the general quality of the activity, including two items referring to the  
328 eudaimonic aspects of the leisure activity (i.e., the activity was the worst - best I can think of; the  
329 activity was low - high standard; the activity did not work out - worked out well; the activity did not  
330 make it possible - made it possible to develop myself; the activity did not strengthen - strengthened  
331 my social relationships). In analogy with the STS, the scores of the SAS vary from -3 to 3 with a  
332 higher score implying higher satisfaction.

333

334 Parallel to the STS, we subdivide the affective component of leisure activity satisfaction from the  
335 cognitive component of leisure activity satisfaction. Since the internal consistency of the six scales  
336 measuring emotions during the leisure activity and the five scales measuring the cognitive evaluation  
337 of that activity are good (Cronbach's alpha is respectively 0.82 and 0.82), we created a positive  
338 emotion variable by averaging the six scales measuring the affective emotions and a positive  
339 evaluation variable by averaging the five scales measuring cognitive evaluation. The average scores on  
340 the positive emotion variable and positive evaluation variable - 1.82 and 1.76 respectively - indicate  
341 that respondents are satisfied with their most recent leisure activity, somewhat more satisfied than with  
342 the trip to the activity. These differences can be partly explained by the fact that people often  
343 participate in leisure activities to satisfy certain needs, while travel is mostly a derived demand, in this  
344 case to enable engagement in leisure activities.

345

#### 346 *5.1.3 Eudaimonic well-being*

347 In order to gain information on the respondents' eudaimonic well-being we asked them - on a five-  
348 point scale going from 1 (strongly disagree) to 5 (strongly agree) - to which extent they agree with the  
349 following seven statements: *I am leading a purposeful and meaningful life; My social relationships*  
350 *give me support and appreciation; I am engaged and interested in my daily activities; I actively*  
351 *contribute to the happiness and well-being of others; I am suitable for and competent in the activities*  
352 *that are important to me; I am a good person and live a good life; People respect me.* Since the  
353 internal consistency (reliability) of this scale is high (Cronbach's Alpha = 0.86), we created one  
354 eudaimonic well-being variable by averaging the seven items. The average score of respondents on  
355 this variable is 4.06; indicating that respondents generally lead a meaningful and full life.

356

#### 357 *5.1.4 Life satisfaction*

358 Life satisfaction is measured using the Satisfaction With Life Scale (SWLS) (37). This scale asks  
359 respondents - on a five-point scale going from 1 (strongly disagree) to 5 (strongly agree) - to which  
360 extent they agree with five statements: *In most ways my life is close to my ideal; The conditions of my*  
361 *life are excellent; I am satisfied with my life; So far I have gotten the important things I want in life; If*  
362 *I could live my life over, I would change almost nothing.* Since the internal consistency (reliability) of  
363 this scale is high (Cronbach's Alpha = 0.87), we created one life satisfaction variable by averaging the  
364 five items. The average score of respondents on this variable is 3.66, indicating that respondents are

365 moderately satisfied with their life. These scores, together with the scores of trip satisfaction, leisure  
366 activity satisfaction and eudaimonic well-being are in line with studies of Diener and colleagues,  
367 indicating that most people are happy and experience above neutral (i.e., positive) emotions most of  
368 the time (38).

369

#### 370 *5.1.5 Travel mode choice, trip duration and trip company*

371 Respondents indicated which travel mode they chose to reach their most recent leisure activity.  
372 Almost half of the respondents travelled by car (48.8%), 9.5% used public transport, 22.5% cycled,  
373 while 19.2% walked to their leisure activity. Since walking results in significantly higher levels of trip  
374 satisfaction compared to using other modes (at  $p < 0.05$ ), we made a binary variable by subdividing  
375 respondents into two groups: respondents cycling or using a car or public transport (0) and  
376 respondents walking (1). We also asked respondents to indicate how long they travelled to reach their  
377 most recent leisure activity. Respondents travelling less than 10 minutes evaluate their trip more  
378 positively (at  $p < 0.05$ ) compared to respondents travelling for more than 20 minutes. We therefore  
379 created a binary variable by giving trips shorter than 10 minutes a value of 0 (34.7% of the trips) and  
380 trips longer than 10 minutes a value of 1 (65.3% of the trips). Finally, we also looked at whether  
381 respondents travelled alone, or together with their partner, family, friends or colleagues/ acquaintances  
382 (multiple answers were possible). Since travelling alone results in significantly lower levels of travel  
383 satisfaction (at  $p < 0.05$ ), compared to travelling together with others, we added the following binary  
384 variable – i.e., travelling alone (0; 42.1% of the trips) versus travelling together with company (1;  
385 57.9% of the trips) – as an explanatory variable of travel satisfaction.

386

#### 387 *5.1.6 Type of leisure activity and activity company*

388 Respondents indicated which type of out-of-home leisure activity they performed most recently. Seven  
389 possible leisure activities were provided: Visiting family/friends; Going out to a bar or club; Eating  
390 out; Going to forest, park, nature; Going to a cultural/sport activity as spectator; Going to a  
391 cultural/sport activity as active participant; and Recreational shopping. Two sample t-tests indicate  
392 that satisfaction levels of respondents participating in cultural/sport activity as active participant are  
393 significantly lower (at  $p < 0.05$ ) than respondents participating in other types of leisure activities we  
394 made the following binary variable: respondents engaging in other activities than actively participating  
395 in cultural/sport activity (0; 91.0%) and respondents actively participating in cultural/sport activity (1;  
396 9.0%). In analogy with the trip to the leisure activity we also asked respondents to indicate with whom  
397 they performed their most recent out-of-home leisure activity: Alone, with partner, with friends, with  
398 children, with family, or with colleagues/acquaintances. We made a binary variable – i.e., performing  
399 leisure activity alone (0; 19.7% of the activities) versus performing leisure activity together with  
400 others (1; 80.3% of the activities) – as an explanatory variable of leisure activity satisfaction.

401

## 402 **6. METHOD**

403 In this study we perform a Structural Equation Modelling (SEM) approach. This approach makes it  
404 possible to examine multiple relationships within a set of variables in which a given variable can be  
405 outcome (dependent variable) in one set of relationships and simultaneously predictor of outcomes  
406 (explanatory variable) in other relationships. In travel behaviour studies, SEM has been used since the  
407 1980s and on a regular base since 2000 (39). SEM offers an appropriate method for the current study  
408 as the proposed conceptual model involves multiple simultaneous relationships among trip  
409 satisfaction, leisure activity satisfaction, eudaimonic well-being and life satisfaction.

410

411 Since outliers may affect the results of a SEM, it is important to detect and remove them. We therefore  
412 examined the Mahalanobis distance (a measure of how distant a vector of observed variable values is  
413 from the vector of sample means) for each case in the data set. The greater the Mahalanobis distance  
414 the greater the contribution to the departure from multivariate normality (40). Cases were removed  
415 five at a time until multivariate normality did not improve anymore. In the end we excluded 40  
416 outliers, resulting in 1,172 respondents. We chose the maximum likelihood estimation approach, the  
417 most common estimation technique used in practice, to develop the SEM in AMOS 22.0. Although the  
418 sample has no multivariate normal distribution (even after removing outliers), the sample size (i.e.,  
419 1,172) is large enough to reduce biases to an acceptable level (39).



420 **7. RESULTS**

421 In this section we analyse the results of the applied SEM of the model presented in Figure 2. The  
422 goodness-of-fit measures of the model are satisfactory; and show that the model specifications fit the  
423 data well (i.e.,  $\chi^2/df = 3.75$ ; RMSEA = 0.05; GFI = 0.99; CFI = 0.98).

424

425 **7.1 Trip satisfaction, leisure activity satisfaction, eudaimonic well-being and life satisfaction**

426 Table 8 shows how (i) trip satisfaction and leisure activity satisfaction, (ii) eudaimonic well-being and  
427 (iii) life satisfaction are related with each other. First of all, a strong effect from the emotions  
428 experienced during the trip on the emotions experienced during the leisure activity exists. In other  
429 words, the mood during the leisure activity is affected by the mood during the trip towards that  
430 activity. The link from trip evaluation to the evaluation of the leisure activity is – although significant  
431 (at  $p < 0.05$ ) – less strong, suggesting that the evaluation of the leisure activity is more affected by the  
432 content and characteristics of that activity than by the evaluation of the foregoing trip. However,  
433 strong indirect effects from feelings during the trip to the evaluation of the leisure activity exist,  
434 mainly through the feelings experienced during the activity. In sum, the mood during the leisure trip  
435 clearly affects satisfaction with the leisure activity at the destination of the trip; it affects the mood  
436 during the leisure activity directly and the evaluation of that activity indirectly. The evaluation of the  
437 leisure trip, on the other hand, seems less connected with satisfaction with the leisure activity. Second,  
438 strong effects exist from (i) the emotions experienced during the trip towards the evaluation of that  
439 trip and (ii) the emotions experienced during the leisure activity towards the evaluation of that activity.  
440 This is in line with studies of Kahneman and colleagues, stating that the evaluation of an activity  
441 episode is a function of the emotions experienced during that episode (41).

442

443 Besides effects within and between trip satisfaction and leisure activity satisfaction, the proposed  
444 model also examined effects from activity satisfaction to eudaimonic well-being and life satisfaction.  
445 A positive effect of the satisfaction with the leisure activity on eudaimonic well-being is present. Both  
446 the emotions during the leisure activity (direct and indirect) and the evaluation of this activity (direct)  
447 positively affect self-development and social relationships of respondents. The mood during the trip  
448 towards the leisure activity also has a significant indirect effect on eudaimonic well-being, through the  
449 mood during the leisure activity.

450

451 Results also show positive effects from trip satisfaction and leisure activity satisfaction on life  
452 satisfaction; the experience of positive emotions during these episodes has a positive influence on the  
453 longer-term evaluation of people's life. The evaluations of leisure trips and activities only have a  
454 significant indirect effect on life satisfaction, through eudaimonic well-being. Finally, eudaimonic  
455 well-being has a strong influence on life satisfaction. Respondents who are contented with their self-  
456 development and social contacts will also be more satisfied with their lives in general.

457

458 **7.2 Additional links**

459 Table 1 shows the direct effects of trip characteristics and leisure activity characteristics on trip  
460 satisfaction and leisure activity satisfaction respectively, and their indirect effects on eudaimonic well-  
461 being and life satisfaction. In line with previous studies, walking to a leisure activity has a significant  
462 positive effect on the mood during the trip and a significant positive indirect effect (through this  
463 mood) on the evaluation of the trip. A trip longer than 10 minutes, on the other hand, has a significant  
464 negative effect on the evaluation of the trip. Travelling together with others positively affects the  
465 mood during the trip and indirectly the evaluation of that trip. Furthermore, travelling in company also  
466 has a significant indirect effect on the mood during the leisure activity at the destination of the trip.  
467 Travelling with others will result in more positive feelings experienced during the leisure activity as  
468 they had a better mood during the trip.

469

470 Respondents actively participating in a cultural or sport activity have a significantly worse mood and  
471 evaluate this activity more negatively compared to respondents engaging in other leisure activities.  
472 Performing a leisure activity together with others, on the other hand, has a positive effect on the mood  
473 during – and the evaluation of – the leisure activity. Trip characteristics (travel mode choice, trip

474 duration and trip company) and leisure activity characteristics (type of activity and activity company)  
475 have no significant, indirect effects on eudaimonic well-being and life satisfaction.

477 **TABLE 1. Standardised direct (D), indirect (I) and total (T) effects of the links in the model displayed in Figure 2 (N = 1,172)**

Endogenous variables →	Positive feelings trip			Positive evaluation trip			Positive feeling activity			Positive evaluation activity			Eudaimonic well-being			Life satisfaction		
	D	I	T	D	I	T	D	I	T	D	I	T	D	I	T	D	I	T
<b>Exogenous variables</b>																		
Travel mode choice (walking)	<b>0.08</b>	-	<b>0.08</b>	0.05	0.05	<b>0.09</b>	-	0.04	0.04	-	0.03	0.03	-	0.01	0.01	-	0.02	0.02
Trip duration (+ 10 minutes)	-0.02	-	-0.02	<b>-0.07</b>	-0.03	<b>-0.09</b>	-	0.02	0.02	-	-0.02	-0.02	-	-0.01	-0.01	-	-0.01	-0.01
Trip company (with others)	<b>0.15</b>	-	<b>0.15</b>	0.02	<b>0.08</b>	<b>0.10</b>	-	<b>0.07</b>	<b>0.07</b>	-	0.05	0.05	-	0.02	0.02	-	0.03	0.03
Type of activity (active participation in a cultural or sport activity)	-	-	-	-	-	-	<b>-0.10</b>	-	<b>-0.10</b>	<b>-0.11</b>	-0.05	<b>-0.17</b>	-	-0.04	-0.04	-	-0.03	-0.03
Activity company (with others)	-	-	-	-	-	-	<b>0.07</b>	-	<b>0.07</b>	<b>0.09</b>	0.04	<b>0.13</b>	-	0.03	0.03	-	0.02	0.02
<b>Endogenous variables</b>																		
Positive feelings trip	-	-	-	<b>0.55</b>	-	<b>0.55</b>	<b>0.47</b>	-	<b>0.47</b>	-	<b>0.32</b>	<b>0.32</b>	-	<b>0.13</b>	<b>0.13</b>	<b>0.08</b>	<b>0.12</b>	<b>0.20</b>
Positive evaluation trip	-	-	-	-	-	-	-	-	-	<b>0.16</b>	-	<b>0.16</b>	-	0.02	0.02	0.05	0.01	<b>0.06</b>
Positive feeling activity	-	-	-	-	-	-	-	-	-	<b>0.54</b>	-	<b>0.54</b>	<b>0.18</b>	<b>0.08</b>	<b>0.26</b>	<b>0.10</b>	<b>0.14</b>	<b>0.24</b>
Positive evaluation activity	-	-	-	-	-	-	-	-	-	-	-	-	<b>0.15</b>	-	<b>0.15</b>	0.01	<b>0.08</b>	<b>0.09</b>
Eudaimonic well-being	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<b>0.53</b>	-	<b>0.53</b>
<i>Squared multiple correlations</i>	0.03			0.33			0.24			0.40			0.09			0.35		

478

479 **8. DISCUSSION AND CONCLUSION**

480 Preliminary results of this study show that trip characteristics have an influence on trip satisfaction,  
481 just as characteristics of leisure activities have an effect on the satisfaction with the performed leisure  
482 activity. Walking, short travel duration and travelling in company have a positive effect on satisfaction  
483 with the trip made. Performing a leisure activity alone has a negative impact on satisfaction with the  
484 leisure activity while also the type of leisure activity (in particular whether respondents participate in a  
485 cultural/sport activity as active participant) affects how people perceive their out-of-home leisure  
486 activity.

487  
488 Results of the performed structural equation model indicate spill-over effects of travel on the activity  
489 at the destination of the trip. A positive mood and – to a lesser extent – a positive evaluation of a trip  
490 will positively affect satisfaction with the (leisure) activity at the destination of that trip. Other  
491 outcomes indicate that satisfaction with short-term activity episodes – in this case trip satisfaction and  
492 leisure activity satisfaction – can affect long-term satisfaction and well-being. Eudaimonic well-being  
493 is directly affected by satisfaction with leisure activities and indirectly (through leisure activity  
494 satisfaction) by the mood during the trip towards this leisure activity. Life satisfaction, on the other  
495 hand is mainly affected by the emotions experienced during that trip and leisure activity. The  
496 evaluation of these activity episodes only affects life satisfaction indirectly, through eudaimonic well-  
497 being; which in turn has a strong influence on people’s satisfaction with life. In sum, results of this  
498 study provide valuable information on how trip satisfaction affects the mood during – and the  
499 evaluation of – the activity at the destination of the trip and how travel can affect long-term well-  
500 being.

501  
502 According to us, this study has two main shortcomings: (i) we used cross-sectional data instead of  
503 longitudinal data and (ii) no information on domain satisfaction of travel and leisure was at our  
504 disposal. Future research analysing the relationship between short-term trip satisfaction and leisure  
505 activity satisfaction and long-term eudaimonic well-being and life satisfaction might benefit, as  
506 indicated before, from using longitudinal data. Doing so enables researchers to statistically identify  
507 causality, which is not possible with cross-sectional data. Using these data makes it possible to analyse  
508 whether repeated positively (or negatively) experienced leisure trips and activities can make changes  
509 in people’s eudaimonic well-being and evaluation of their life. However, this might not be so obvious  
510 as life satisfaction and eudaimonic well-being tend to rather stable over time (12, 38). According to the  
511 hedonic treadmill theory, positively or negatively experienced activity episodes will affect happiness  
512 temporarily, but in short time it will return to hedonic neutrality (42). However, studies do indicate  
513 that long-term well-being is not stable over the course of an entire life span and can vary over longer  
514 time periods (i.e., periods of numerous years) (38). Anyhow, longitudinal data over a long period of  
515 time would be necessary in order to analyse potential changes in life satisfaction and/or eudaimonic  
516 well-being.

517  
518 Another limitation of this study is that we do not have information on domain satisfaction of travel and  
519 leisure. Information on this medium-term satisfaction could provide valuable insight on the  
520 relationship between specific leisure trips and activities and long-term well-being, as satisfaction with  
521 (daily) travel and satisfaction with leisure (in general) might play an intermediate role in this link.  
522 Specific trips and leisure activities might affect life satisfaction and eudaimonic well-being (in case of  
523 leisure) indirect, through this domain satisfaction of travel and leisure (as indicated by Figure 1). In  
524 this respect, it is worth noticing that (25) analysed the link between satisfaction with daily travel (i.e.,  
525 domain satisfaction) and life satisfaction. According to this study satisfaction with daily travel affects  
526 life satisfaction both direct and indirect, through satisfaction with out-of-home activities. However,  
527 they used positive and negative affect experienced during specific activities as a proxy for activity  
528 satisfaction (thus short-term activity satisfaction) while satisfaction with daily travel was measured by  
529 asking respondents to rate general statements such as *I am completely satisfied with my daily travel*  
530 (thus medium-term domain satisfaction). It has to be noted, however, that the link between short-term  
531 satisfaction with (i) leisure trips and activities and (ii) medium-term domain satisfaction of travel and  
532 leisure might not be so straightforward due to a rather large variety in leisure trips and activities. A

479 focus on commute trips and work activities might circumvent this problem as these trips and activities  
480 are – in most cases – less subject to variability.

481

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