

# Emotional Well-Being during Travel

Subjects: **Transportation**

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Well-being has been suggested as another indicator of social development level besides income and economic prosperity. Traveler emotional well-being as a specific domain of subjective well-being has attracted attention across the field of transportation.

emotional well-being

travel purpose

travel duration

## 1. Introduction

The United Nations General Assembly adopted resolution 65/309 Happiness, "Towards a Holistic Definition of Development" in July 2011, and the United Nation's Sustainable Solutions Network has published the World Happiness Report every year since 2012. This trend is consistent with the growing evidence that happier people tend to be healthier and successful across work, marriage, sociality, and so on <sup>[1][2][3][4][5][6]</sup>.

Travel plays an important role in people's daily life, and travel experiences influence their emotional well-being towards travel as well as life. Evidence shows that travel-related factors affect subjective well-being, transportation planners, engineers, and policymakers can better understand the inner connections between traffic systems and EWB, and thus can formulate transportation policies to improve the travel happiness and life happiness of the public <sup>[7]</sup>. Hence, analyzing the influence of travel factors on travel happiness and EWB has received great interest from researchers in the field of well-being.

SWB consists of three components including positive affect, negative affect, and cognitive SWB <sup>[8]</sup>. The balance of positive affect and negative affect during people's daily activities is defined as emotional well-being (EWB) <sup>[9]</sup>. Subjective well-being (SWB) is defined as the degree to which individuals positively evaluate the overall qualities of their lives according to their living criteria <sup>[10]</sup>. As Friman et al. <sup>[11]</sup> judgment that EWB is obtained by the frequencies, average intensity, or different duration of positive and negative affect <sup>[12][13][14]</sup>.

Past research has explored the relationship between travel factors (e.g., mode, duration, congestion) and EWB <sup>[15][16][17]</sup>. In these elaborate studies, whether and how specific travel modes and corresponding travel duration contribute to travel-related EWB were discussed thoroughly. Chen et al. <sup>[18]</sup> proposed a new process by combining optimal scale regression, factor analysis, and analytic hierarchy to isolate different factors, and based on these factors having greater impacts on travel-related EWB, they provided some suggestions on planning, engineering as well as policy to improve travel-related EWB.

Although many methodologies have been proposed, they have not yet adequately solved the many challenges associated with factors selection for travel-related EWB, in particular, the importance or influence of different factors is difficult to compare, and it is still an open problem that needs addressing. Researchers made use of the maximal information coefficient (MIC) to identify the factors' importance to travel-related EWB. Compared to one similar previous work [\[18\]](#), the research which explored maximal information coefficient to extract the factors contains the following new contributions; (a) using MIC to extract factors which have advantages of equitability [\[19\]](#), and are better to identify a linear or nonlinear relationship between variables than a conventional statistic model; (b) evaluating the different factors' relevance and importance to EWB directly by MIC, while the models based on utility theory focus on some relationship between travel-related EWB and certain factors such as travel mode and travel duration; (c) researchers illustrate self-evaluation of activities has a significant impact on travel-related EWB, a factor that was ignored in the previous work; (d) the results demonstrate that travel mode and interact during travel have a relatively small impact on emotional well-being than travel purpose and travel duration, which is different from previous research [\[18\]\[20\]\[21\]](#) and partly consistent with [\[22\]\[23\]](#).

## **2. Transport Policy Suggestions**

### **2.1. Guarantee Good Rest and Health**

Good rest and health have a significant impact on improving travel-related EWB. Good rest requires a good living environment; furthermore, living environment is closely related to the selection of residential land and the planning and design specifications of the residential area. Unfortunately, the "Urban" Residential Area Planning and Design Standards" (GB50180-2018) of China does not have any corresponding clauses on how to reduce the impact of urban road noise on residential areas. Therefore, it is recommended to build green spaces and reduce the impact of urban road noise on residential areas.

In addition, it is more cost-effective to invest in the construction of rest areas on the expressway to increase the travel-related EWB of individuals. Strengthening management to release travelers from experiencing travel fatigue is also an effective strategy to improve travel happiness. At the same time, urban environmental quality has a significant impact on the health of residents. Since the main sources of urban environmental pollution are traffic noise and automobile exhausts, this can be reduced by using electric environmentally protective vehicles and green fuel substitutes. Regular inspection and maintenance of vehicles can directly reduce emissions pollution as well.

What is more, urban transport structure can be optimized with the guidance of comprehensive public transport, which can effectively alleviate the exhaust of urban road vehicles' pollution. The measures are as follows: improvement of urban public transport infrastructure; renewal and transformation of public transport vehicles; rational planning of urban public transport lines and density; setting bus lanes on roads with certain conditions; and improvement of urban public transport coverage and share rate. Taking a series of traffic-calming measures in streets and residential areas, such as adjustment of road network structure, community entrance design, parking

planning, construction of slow traffic facilities, planting arbors, etc., can effectively reduce traffic noise pollution and provide environmental protection for resident's good rest and health.

### 3.2. Encourage Traveler Interaction during Travel

Interaction during travel plays an important role in improving travel-related EWB. Therefore, family travel and group travel are encouraged by adopting more favorable ticketing and charging models, setting up facilities such as seats in buses, subways, and stations that facilitate group exchanges. In tourist attractions and places of entertainment facilities with a large number of tourists, multiparticipant projects can be set up. Moreover, consideration can be given to strengthening the interaction between travelers and transport facilities, such as building up electronic bus-boards and installing multimedia in vehicles to reduce pressure sensation during travel. Constructing a 15 min living circle residential area will improve people's accessibility to various living services and facilities, which will help encourage people to travel with relatives and friends and strengthen interactions.

### 3.3. Improve the Travel Environment

Travel characteristics affect residents' travel-related EWB to a large extent, including travel purpose, travel duration, and travel mode. Studies have shown that there is a significant connection between travel purpose and travel-related EWB. Therefore, it is particularly important to establish a transportation environment that is conducive to more autonomous travel. At the same time, shortening travel time is beneficial to improve travel-related EWB. Some studies have shown that people who travel longer are more likely to have negative emotions such as fatigue, stress, and sadness [23]. In order to shorten travel duration, clear road grades and functions, clear road rights, and optimized traffic structure should be made in the planning stage. Additionally, P + R facilities and internal public transport facilities should be improved to ensure the good accessibility of urban traffic.

Travel modes also have an impact on travel-related EWB. Studies have shown that nonmotorized travel modes such as walking have the highest levels of well-being. Urban slow transit systems consist of a nonmotorized vehicle system and pedestrian system. This is the main mode of short-distance travel, and is also an indispensable transportation mode for connecting medium- and long-distance travel with public transportation.

In the inner part of the city, the nonmotorized lane layout should be rationally designed in combination with the actual traffic flow and section status of the road as well as in combination with the construction of the landscape pedestrian belt. Recreational bicycle lanes along rivers should be planned to create a pleasant nonmotorized traffic environment together with the landscaped pedestrian corridor. In order to construct a pleasant pedestrian system, commercial pedestrian streets, assembly squares, and pedestrian crossings should be beautified.

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