

The Effect of Busyness on Individual Travel--An Empirical Analysis Based on CGSS 2017

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Abstract: With the globalization of the economy and the increasingly competitive market, busyness has become a normal part of residents' lives and is the main inhibiting factor affecting their travel today. Based on this, the article examines the impact of residents' busyness on travel using micro data from the China General Social Survey (CGSS) 2017. First, the article identifies the effect of busyness on residents' willingness to travel and travel behavior through a Double-Hurdle model. The findings show that busyness has a dampening effect on residents' travel, and this finding remains stable after robustness testing. Secondly, this study further analyzes the effect of different groups of busy people on travel, and the results of the study show that the inhibitory effect of middle-aged people and urban residents on travel due to busy people is more obvious. This paper provides more specific and targeted research ideas for the development and transformation of tourism demand.

1. Introduction

As we all know, tourism is a promising form of consumption, and going out to travel as an important spiritual consumption has become an important part of many people's life consumption. Tourism was once defined by the state as a strategic pillar industry that contributes to the improvement of the national economy, and with its development, it has gradually become a modern service industry that satisfies the people more and more, covering "Food, Housing, Transportation, Travel, Shopping and Entertainment" of the population, which includes and is associated with almost all service industries.

Due to the growth of the consumer demand of the residents, their consumption needs have become popular and diversified, which brings unprecedented opportunities and challenges to the development of tourism, but in turn, the study of the residents' willingness to travel and the actions they take for this purpose can provide the necessary basis for the planning and design of tourism products, the effective development and utilization of tourism resources, and the layout and construction of tourism service facilities.

Many scholars have conducted numerous theoretical and empirical studies on the factors influencing residents' willingness to travel, and have reached the unanimous conclusion that leisure

time and knowable income are the main factors affecting residents' travel, and the role they play is very important. At present, economic income and limited leisure time are still the main reasons and important factors affecting residents' willingness to consume.

In the existing studies on residents' travel, scholars generally believe that limited leisure time restricts residents' travel, while little attention is paid to the fact that the main reason for limited leisure time is busyness. With the development of social productivity, the residents' consumption needs are more diversified at the same time, the market competition is becoming more and more intense, the employment environment is severe, the pressure of residents' survival life is becoming heavier and heavier as well as being pushed to a higher level at the moment of the epidemic, and what employees fear more than overtime is unemployment. Therefore, busy has become the norm of people's lives today, so will they still choose to travel in their busy lives?

2. Literature Review

Residents' travel is a process that transforms from motivation to demand for travel and finally to action. Travel motivation is the endogenous motivation for residents to travel, and residents who have travel motivation are equivalent to having the demand for travel^[1]. However, whether travel motivation can be transformed into travel action is influenced by various factors. The income of residents is the main factor that affects travel. Since the reform and opening up, there has been an unprecedented rise in the domestic demand for travel in China, which is mainly due to the rapid rate of economic development and the increase in the per capita knowable allotment income of residents. According to the relevant principles (consumer economics, behavioral science), the per capita knowable matching income of residents largely influences the domestic travel rate of urban and rural residents in China as well as the passenger flow^[2]. Different incomes of residents imply differences in disposable incomes, which cause larger differences in the choice of travel destinations, travel time, and travel frequency. In general, the higher the income, the longer and more frequent the travel time^[3].

In addition to income, another factor that affects travel is leisure time. Leisure is defined as the remaining discretionary time of an individual other than labor time, necessary time for life (including physical needs and family work), etc. In recent years, the state has launched various policies to encourage the public to travel, for example, in 1995, China began to implement the system of working 5 days a week and resting 2 days, and 4 years later, began to have three long holidays, May Day, National Day and Spring Festival, from then on, there are 115 days off in a year. The change in the leave system not only changed the structure of residents' leisure time, but also consequently further affected the time and frequency of travel, etc^[4]. The core of the leisure problem lies not in the quantity of leisure time, but in the quality of leisure^[5]. Higher quality of leisure means that it will enhance people's potential travel demand and also increase the possibility of potential travel demand turning into travel action.

However, social competition is becoming more and more intense, and the pressure of life, study and work of residents is becoming more and more intense, people are getting busier and busier, people are socializing with each other, communication time is becoming less and less, and psychological pressure is increasing. This phenomenon will be more and more intense in the future, so for the tourism industry, in a busy environment, residents are still willing to travel? Will travel become a high-class luxury item? How will the tourism industry address the needs of the average working class? In previous studies, scholars have paid little attention to the impact of busyness on travel. Traditionally, leisure and busyness have always been antonyms and do not coexist. In the stereotype, leisure and entertainment are always linked, with "idle" people playing and busy people not intertwined with leisure and entertainment, as if busy people are equal to having less leisure

time. But In fact, the two sides of the world are co-existing with each other, and busy people are intrinsically eager to relieve stress and to take trips. For adults, a busy job means a long working day, with a perceived increase in allotted income, a strong quality of leisure trips compared to those with more free time, a strong potential willingness to travel, and a stronger sense of self-awareness to turn the willingness to travel into behavior. People with more leisure time have more time to travel, but the attractiveness of travel decreases. People who have a lot of time for leisure time have more time to travel, but the attractiveness of travel decreases. People who have a lot of time for leisure time have more time to travel, but the attractiveness of travel decreases. This is as a reward for employees, but also as an incentive for other employees. Theoretically, busy people are more eager to travel because of the pressure, but the actual results need to be further analyzed by data to prove.

3. Research Design

3.1. Data

The data used in this paper are from the China General Social Survey CGSS, which is a survey of individuals in 10,000 households in 1,000 residential (village) committees in 500 streets (townships and towns) in 125 counties (districts) across China. The data contains information on Chinese residents' weekly working hours, individual characteristics (including gender, education level, etc.), family characteristics (marital status), urban and rural areas, and other levels and aspects. 12582 samples were provided by CGSS2017, and 5972 sample observations were finally obtained after a series of processing such as deleting samples with missing indicators and invalid samples in this study's selection.

3.2. Variable Description

Explanatory variable: travel, which can refer to the number of times an individual spent a night out in a year. The travel variable in this study was selected from the questionnaire, "In the past year, how many nights did you spend at home without staying overnight because you went on vacation or visited friends or relatives?" The number 0 means never spent a night out, 1 means 1 to 5 nights out, 2 means 6 to 10 nights out, 3 means 11 to 20 nights out, 4 means 21 to 30 nights out, and 5 means more than 30 nights out. The higher the number, the higher the number of overnight stays, based on the fact that most definitions of tourist and visitor include a provision for overnight stays at the destination in order to meet the literal criteria for qualifying as a "tourist".

Key explanatory variable: busyness. The article uses weekly hours of work as a proxy variable for resident busyness. The hours worked per week variable was selected mainly from the CGSS questionnaire option "How many hours do you usually work per week?"

Control variables: through the available references, the control variables in this paper are mainly individual characteristics such as annual personal income, age, gender, education level, urban and rural areas, and family characteristics such as marital status in 2016 (the previous year), and the above six variables are used to study the impact on residents' travel. According to Zhang and Wan^[6], each individual will have a great influence on the motivation of travel participation as they grow up and develop physically and mentally, and there will be a great difference for the frequency of travel i.e., individuals at different ages will have different attitudes towards travel.

Therefore, in the model, this paper investigates how the differences in gender, education level, and income affect residents' travel by controlling for age, and then step by step, by controlling for gender, education level, and income, we investigate the effects of the remaining variables on residents' travel. Wu et al.^[7] also pointed out that family structure also affects the frequency of

travel, with the highest frequency of travel for couples after their first marriage, so marital status was controlled for in the model. The description of the above variables is detailed in Table 1.

Table 1: Names of main variables and their explanations

Variable classification	Variables	Implications
Explanatory variable	Travel	0=never; 1=1-5 nights; 2=6-10 nights; 3=11-20 nights; 4=21-30 nights; 5=more than 30 nights.
Key explanatory variable	busyness	Working hours per week (logarithmic)
Control variables	Age	Year of survey - year of birth
	Gender	0=female; 1=male
	Marriage	0=unmarried; 1=married
	Education	Conversion to years of education: 0 = no education; 6 = private school, literacy class and elementary school; 9 = junior high school; 12 = vocational high school, general high school, secondary school and technical school; 15 = university college (adult higher education), university college (regular higher education), university undergraduate (adult higher education); 16 = university undergraduate (regular higher education); 19 = postgraduate and above.
	Income Urban and rural	Last year's total annual revenue (logarithm) 0=rural; 1=urban

Source: Based on CGSS questionnaire scale.

3.3. Descriptive statistical analysis

Table 2: Descriptive statistics of variables

Variable Type	Variables	Obs	Mean	SD	Min	Max
Explained Variable	Travel	5972	0.93	1.335	0	5
Key explanatory variable	busyness	5972	3.731	0.622	0	5.12
Control variables	Income	5972	9.640	2.539	0	16.11
	Gender	5972	0.56	0.497	0	1
	Age	5972	44.67	13.379	18.00	93.00
	Urban and rural	5972	0.62	0.484	0	1
	Education	5972	12.76	6.044	0	16
	Marriage	5972	0.80	0.403	0	1

Table 2 reports the descriptive statistical analysis of variables, mainly including the minima, mean and standard deviation of data samples. From this table, we can see several points. First of all, in all 5972 samples, the average travel time of the explained variable is 0.93, indicating that Chinese individuals travel 1-5 times a year on average. The key explanatory variable, busyness, is that the average weekly working hours of individual interviewees is 3.713, and the standard deviation is 0.622, indicating that busyness has become the norm of people's life. The minimum age of the interviewees is 18, indicating that the selected research individuals have grown up and have the right to choose whether to travel and the number of trips. Secondly, the gender ratio of men and women is close to 1:1, and urban residents account for 48.4% of the sample. Among the

interviewed individuals, 40.3% are married, and most of them are unmarried. The sample selection is reasonable. Finally, after converting the education level of the interviewees into years, the average value is 12.76, indicating that most of the selected samples are high school educated. The average value of the logarithmic total income of individuals in the previous year (2016) is 9.6396 yuan, indicating that the income level of the interviewees is above the middle level, which provides a good economic guarantee for travel.

3.4. Model Construction

The decision process of residents' trips consists of two stages, the first stage is whether residents choose to go on a trip, and the second stage is the number of trips (trip frequency), which can only be observed and counted as a specific number of trips if residents have actually participated in a trip. The first stage is a kind of binomial choice, represented by the numbers 1 and 0. 1 means that the resident chooses to travel and 0 means that the resident has not made a trip; the observed value of the second stage is the data after removing the zero value as the cut-off point. Whether residents choose to go out to travel there are more zero values, previous econometric methods to study this problem mostly use Tobit model to solve, but this paper studies the residents' travel situation, divided into two stages, Tobit model can not solve the two-stage problem^[8], referring to the research results of Cragg^[9], this study constructs Double-Hurdle model to analyze the influence of weekly working hours (busyness) on residents' travel.

First, to construct a model of whether residents choose to travel outside the home.

$$\text{Prob}(y_i = 0 | X_{1i}) = 1 - \Phi(\alpha X_{1i}) \quad (1)$$

$$\text{Prob}(y_i > 0 | X_{1i}) = \Phi(\alpha X_{1i}) \quad (2)$$

Equation (1) indicates that residents do not travel, and equation (2) indicates that residents do travel. Where is the standard normal distribution cumulative function, is the explanatory variable, indicates whether residents choose to travel out, indicates the weekly working hours variable, and also includes control variables such as age and marriage. is the corresponding coefficient to be estimated, which indicates the first observation sample.

Next, the number of trips made by residents is modeled as follows.

$$E(y_i | y_i > 0, X_{2i}) = \beta X_{2i} + \delta \lambda(\beta X_{2i} / \delta) \quad (3)$$

In equation (3), is the conditional expectation, denoting the number of trips made by residents; is the inverse Mills ratio; denotes the variable of weekly working hours, also includes control variables such as age and marriage; denotes the standard deviation of intercepting normal distribution; other symbols mean the same as before.

Based on the three equations of (1) (2) (3), the following likelihood function is constructed.

$$\ln L = \sum_{y_i=0} \{ \ln[1 - \Phi(\alpha X_{1i})] \} + \sum_{y_i>0} \left\{ \ln \Phi(\alpha X_{1i}) - \ln \Phi\left(\frac{\beta X_{2i}}{\delta}\right) - \ln(\delta) + \ln\{\Phi[(y_i - \beta X_{2i})/\delta]\} \right\} \quad (4)$$

In equation (4), denotes the value of the log-likelihood function. The required relevant parameters can be obtained by estimating equation (4) using the great likelihood method.

4. Result

4.1. Double-Hurdle model regression results

Table 3 reports the regression results for Double-Hurdle Model. The results show that the coefficient of the effect of busyness (weekly working hours) on the willingness to travel is -0.098, which is statistically significant at the 1% level, indicating that busyness inhibits the willingness of residents to travel. Second, the coefficient of the effect of busyness on the intention to travel is -0.067, which negatively and significantly affects the number of trips residents take at the 5% level. In other words, the busier the residents are, the less they want to travel, and the frequency of busyness inhibits the number of trips they take. The longer and busier the resident's work week is, the less free time he or she has, and the opportunity and willingness to travel decreases.

Table 3: Regression results

Variables	Double-Hurdle Model		Zero-inflated negative binomial regression model	OLS regression model
	Willingness to travel (1=travel, 0=no travel)	Number of trips		
busyness	-0.098*** (0.028)	-0.067** (0.029)	-0.097*** (0.032)	-0.095*** (0.026)
Marriage	-0.179*** (0.044)	-0.101 (0.034)	-0.110** (0.047)	-0.171*** (0.045)
Gender	-0.008 (0.035)	-0.052 (0.027)	-0.007 (0.038)	-0.012 (0.034)
Income	0.061*** (0.007)	0.052*** (0.006)	0.075*** (0.008)	0.060*** (0.008)
Age	-0.017*** (0.001)	-0.014*** (0.001)	-0.020*** (0.016)	-0.016*** (0.001)
Education	-0.001 (0.003)	-0.005** (0.002)	0.001 (0.003)	-0.002 (0.003)
Urban and rural	0.409*** (0.039)	0.353*** (0.30)	-0.526*** (0.045)	0.403*** (0.036)
Constants	1.376*** (0.149)	1.100*** (0.113)	0.073 (0.167)	1.347*** (0.145)
Log-likelihood	-9058.700	-7701.657	-7658.275	-
Obs	5972	5972	5972	5972

Note: ***, **, * represent the corresponding coefficients are significant at the 1%, 5%, and 10% statistical levels, respectively, and the standard errors of coefficient estimates are in parentheses.

4.2. Robustness tests

Although different control variables are included in the Double-Hurdle model, the model estimation results may still be influenced by various factors such as model setup and variable selection^[10]. Therefore, in this paper, we use a modified model setting to test the robustness of the model. Considering the presence of a large number of zeros in the sample, and also after testing, we found that there is a risk of excessive dispersion in the sample variance, therefore, the article replaces the Double-Hurdle model with a zero-inflated negative binomial regression model. In addition, because of the large sample size and the numerical setting of tourism intensity consistent with the intensity implication, the article also utilizes the OLS regression model for auxiliary

validation. The regression results of the robustness tests are given in the third and fourth columns of Table 3. The regression results after changing the model are generally consistent with those of the Double-Hurdle model.

5. Heterogeneity discussion

5.1. Age heterogeneity

Based on the age classification of Zhang et al.^[11] and Liu and Shan^[12], this study divides 18 to 30 years old into youth, 31 to 56 years old into middle age, and over 56 years old into old age. According to the Double-Hurdle model, it studies the age difference of the impact of busyness on individual residents' travel. Table 4 Regression results on the impact of age difference on travel show that busyness has a negative impact on residents' travel at any age, but busyness has a negative impact on middle-aged residents' choice of whether to travel at the 1% statistical level, with a coefficient of -0.111; At the statistical level of 5%, the number of trips of middle-aged residents is significantly negatively affected, with a coefficient of -0.071, while the impact of busyness on whether young residents and elderly residents travel and the number of trips is not significantly negative. The reason is that most middle-aged residents between the ages of 31 and 56 have been married. They are not only the mainstay of society, but also the mainstay of every family. Generally, this kind of residents have greater life pressure, greater responsibility and more maturity. The busier they are, the more they will be suppressed and the less they will travel.

Table 4: Age heterogeneity

Variables	Youth groups		Middle-aged group		Elderly population	
	Willingness to travel	Number of trips	Willingness to travel	Number of trips	Willingness to travel	Number of trips
busyness	-0.110 (0.105)	-0.046 (0.080)	-0.111*** (0.038)	-0.071** (0.030)	-0.014 (0.042)	-0.012 (0.029)
Other variables	Controlled	Controlled	Controlled	Controlled	Controlled	Controlled
Constants	1.807*** (0.224)	1.234*** (0.318)	0.269 (0.181)	0.205 (0.142)	-0.061 (0.189)	0.045 (0.129)
Log-likelihood	-1961.458	-1797.108	-6378.651	-5808.9833	-1780.346	-1438.9728
Obs	1067	1067	3770	3770	1135	1135

Note: ***, **, * represent the corresponding coefficients are significant at the 1%, 5%, and 10% statistical levels, respectively, and the standard errors of coefficient estimates are in parentheses.

5.2. Urban-rural heterogeneity

China is a vast country with a large population base, and large development imbalances still exist between different regions and between towns and villages. It is the existence of this dualistic social structure that allows different residents to have different willingness to travel among themselves, but it still needs further verification whether the influence of this inter-resident variability is really manifested in causing residents to choose to travel. In this section, based on the self-reported results of respondents in the CGSS, the preliminary comparative analysis of the results shows that there are still significant differences between urban and rural respondents. The regression results of urban-rural heterogeneity are given in Table 5. Busyness becomes a negative effect on travel for urban residents at 1% significance level with a coefficient of -0.186 and more negative effect on whether to travel with a coefficient of -0.119, however, it becomes a positive effect for rural residents, although the effect is not significant. However, it means that for urban residents, the

longer the working hours per week, the less they want to travel, while for rural residents, the longer the working hours, the stronger their willingness to travel as well as the more frequent they travel. Since the consumption of travel is heterogeneous, a certain basis is needed to realize the demand for travel, i.e., a certain amount of leisure time is needed. One of the important reasons for the fluctuation of income elasticity of travel demand of urban and rural residents in China is the change of leisure time structure. The reason why urban residents do not want to travel and reduce their travel behavior when they work longer hours and are busier is because most of the urban residents' income comes from work and a few from investment and finance, etc. The income comes from work and the busy work brings less leisure time and less time to match. But rural residents are different, most of them are mainly engaged in agriculture, and their leisure time is closely related to the seasonality of crops; during the busy season, residents have very little leisure time, but during the idle season, residents have longer leisure time, so the leisure time of traditional rural residents is more concentrated and lasts longer than urban residents, relying on seasonal characteristics very obviously^[13]. When rural residents have a job, the busier they are, the better their harvest and the higher their income is reflected laterally, and after the farming season is over, a large amount of leisure time is subsequently available for travel, thus promoting the degree of influence of rural residents' busyness on travel.

Table 5: Urban-rural heterogeneity

Variables	Urban		rural	
	Willingness to travel	Number of trips	Willingness to travel	Number of trips
busyness	-0.186 ^{***} (0.046)	-0.119 ^{***} (0.036)	0.005 (0.031)	0.001 (0.022)
Other variables	-0.150 ^{**} (0.061)	-0.079 [*] (0.048)	-0.169 ^{***} (0.063)	-0.093 ^{**} (0.045)
Constants	2.049 ^{***} (0.224)	1.534 ^{***} (0.175)	0.783 ^{***} (0.189)	0.722 ^{***} (0.135)
Log-likelihood	-6637.289	-6103.496	-3341.036	-2730.962
Obs	3732	3732	2240	2240

Note: ***, **, * represent the corresponding coefficients are significant at the 1%, 5%, and 10% statistical levels, respectively, and the standard errors of coefficient estimates are in parentheses.

6. Conclusions and recommendations

Numerous scholars have studied the influencing factors of traveling and have made a lot of achievements, among which income and leisure time have become the main factors to become consensus, but very few scholars have studied the correlation between busyness and traveling. With the development of the economy, the globalization of the economy, the competition between people is more and more severe, in this context, the residents are getting busier and busier, the tourism industry needs to understand the real needs of the residents in depth and seek new directions and prospects. Therefore, this study explores the relationship between busyness and residents' willingness to travel and the number of trips using CGSS 2017 microdata, and the main findings are as follows: first, residents' busyness negatively and significantly affects residents' trips; in other words, the busier residents are, the less they want to travel, i.e., the more frequent they are busy, the number of trips decreases subsequently. Second, the negative effect of busyness on the number of trips taken by middle-aged residents is more significant than that of young and old residents. Third, the negative effect of busyness on travel is more significant for urban residents than for rural residents.

Based on the above findings, the following policy recommendations are made to better understand and meet the needs of residents and to convert more potential tourists into tourists. First, as the proportion of busy people is increasing nowadays and has become a large group of potential tourists, in order to better curb the negative impact of busyness on residents' travel and convert this group of people into tourists, the relevant management should, when formulating regional tourism development strategies, not only give full play to the region's tourist attraction elements and strengthen the construction of scenic facilities, but also develop for different groups of tourists different projects and marketing strategies to attract tourists as much as possible and provide them with high-quality tourism experiences. Second, in the same busy situation, middle-aged residents than young and old the more do not want to travel. This group is the most inhibited by busyness to travel, and the number of people is too heavy to ignore. To liberate middle-aged residents' willingness to travel that is suppressed by their busy schedules, it is necessary for the government to advocate for residents to travel, to strictly require the implementation of holidays, to set indicators for inspection, and to punish companies that do not follow the rules. Thirdly, the more urban residents than rural residents do not want to travel. Urban residents are mostly employed in enterprises, so enterprises are needed to implement paid vacations or enterprise arranged trips for employees with excellent performance, appropriate group trips when the department completes big projects, etc., as well as to guarantee benefits such as retirement for employees.

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