FACTORS AFFECTING THE TRAVEL PREFERENCES AND BEHAVIORS UNDER THE PANDEMIC CONDITIONS: İZMİR CITY CASE

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ABSTRACT

FACTORS AFFECTING THE TRAVEL PREFERENCES AND BEHAVIORS UNDER THE PANDEMIC CONDITIONS: İZMİR CITY CASE

People prefer or have to choose different travel modes for various reasons while travelling. The Covid-19 Pandemic has led to the change and restructuring of social life by threatening people's health. It has created important changes on travel preferences and behaviors. The importance of travel preference in transportation has increased during the pandemic period. This study aims to contribute to the literature by comparing the change in travel patterns before and during the Covid-19 Pandemic. Lately, the current reasons for preference have been largely affected by the Covid-19 Pandemic. This study reveals how the travel preferences and external factors of travel have changed. In the study, home-based work, and home-based social travels were examined.

The case study of the study includes central districts of İzmir. Research data obtained by 385 person-based surveys. Since the basic methodological approach is the before/during study, the study is examined in two periods, before and during the Covid-19 Pandemic. Chi Square and McNemar-Bowker Test methods were used in the study. The study discusses the significance of the Covid-19 Pandemic effect on travel preferences and external factors on travel preferences. As a result of the study, Covid-19 Pandemic effect on travel preferences and travel external factors was found to be significant. Social travels mode preferences were the most affected by external factors. Private car ownership was the strongest external factor in travel preference before the pandemic, and education level was the strongest external factor during the pandemic period. With the pandemic effect, the total strength of age, student/employee factors decreased, and the total strength of gender and education level factors increased. There was no change in the strength of the private car factor.

Key Words: *Travel Preferences, Travel Preference Factors, Urban Mobility, Urban Transportation, Transfer Center.*

ÖZET

SALGIN DÖNEMİNDE SEYAHAT TERCİHLERİNİ VE DAVRANIŞLARINI ETKİLEYEN FAKTÖRLER: İZMİR ŞEHRİ ÖRNEĞİ

İnsanlar seyahat ederken çeşitli nedenlerle farklı seyahat modlarını tercih etmekte ya da seçmek zorunda kalmaktadır. Covid-19 Pandemisi, insanların sağlığını tehdit ederek toplumsal hayatın değişmesine ve yeniden yapılanmasına neden olmuştur. Seyahat tercihleri ve davranışları üzerinde önemli değişiklikler yaratmıştır. Pandemi döneminde ulaşımda seyahat tercihinin önemi artmıştır. Bu çalışma, Covid-19 Pandemisi öncesi ve sırasında seyahat alışkanlıklarındaki değişimi karşılaştırarak literatüre katkı sağlamayı amaçlamaktadır. Son zamanlarda güncel tercih sebepleri Covid-19 Pandemisinden büyük ölçüde etkilenmiştir. Bu çalışma, seyahat tercihlerinin ve dış seyahat faktörlerinin nasıl değiştiğini ortaya koymaktadır. Çalışmada ev-iş ve ev-sosyal seyahatleri incelenmiştir.

Çalışma İzmir'in merkez ilçelerini kapsamaktadır. Araştırma verileri kişi bazlı 385 anketten elde edilmiştir. Temel metodolojik yaklaşım önce/sırasında çalışması olduğu için çalışma, Covid-19 Pandemi öncesi ve pandemi sırasında olmak üzere iki dönemde incelenmektedir. Çalışmada Ki Kare ve McNemar-Bowker Testi yöntemleri kullanılmıştır. Çalışma, Covid-19 Pandemi etkisinin seyahat tercihleri üzerindeki önemini ve seyahat tercihlerinin dış faktörlerini tartışmaktadır. Çalışma sonucunda, seyahat tercihleri ve dış seyahat faktörlerinde Covid-19 Pandemi etkisi anlamlı bulunmuştur. Dış etkenlerden en çok etkilenen ise sosyal seyahat modu tercihleri oldu. Pandemi öncesi seyahat tercihinde en güçlü dış etken özel araç sahipliği, pandemi döneminde ise eğitim düzeyi en güçlü dış etkendi. Pandeminin etkisiyle yaş, öğrenci/çalışan faktörlerinin toplam gücü azalırken, cinsiyet ve eğitim düzeyi faktörlerinin toplam gücü arttı. Özel araç faktörünün gücünde bir değişiklik olmamıştır.

Anahtar Kelimeler: *Seyahat Tercihleri, Seyahat Tercih Faktörleri, Şehir İçi Hareketlilik, Şehir İçi Ulaşım, Aktarma Merkezi*

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CHAPTER 1

INTRODUCTION

1.1. Problem Definition

Transportation has an important place in reaching the urban activities such as business, health, education, entertainment, social and cultural activities. These activities create urban mobility. Urban travels, such as home-based work, and home-based social, create urban mobility. Therefore, we cannot think all activities in cities without transportation. To investigate these transportation relations more deeply, some concepts were used from the literature. The concept of travel preferences forms the basis of urban transportation relations. Knowing travelers' preferences about travel mode and time is important for determining the transportation system in the city.

The importance of travel preferences has been better understood as the Covid-19 Pandemic has showed how people were affected and changed their travel behaviors. According to Karataş (2020), the Covid-19 Pandemic has also turned into a social phenomenon as well that affects everyday life and lifestyles of societies.

After the first Covid-19 case was announced by the Turkish Ministry of Health on March 11, 2020, the Covid-19 Pandemic caused various social unrests in Turkey as well as in other countries. As the number of cases began to increase, also quarantine precaution in the country on weekends and holidays started. In addition to this situation, online education system was enacted. Such precautions have affected urban life and urban mobility. This study investigates the Covid-19 Pandemic effects on two main concepts: travel preferences, and external factors of travel.

For the first concept, we can say that the travel preference forms the basis of urban transportation. The increase in the human population in the cities also increases the mobility in the cities. In addition to the population increase in urban areas, the increase in urban mobility may lead to problems such as traffic problems, accidents, air pollution, and economic loss. "Travel preferences" are important to manage the increasing mobility need in cities. Ambarwati et al. (2017) states that to create an efficient and sustainable transportation system in cities, the patterns of commuting, roads, and public

transportation (PT) systems should be interpreted well, and it is important to examine the travel mode preferences of the people living in the region. In addition, this issue is also important to understand the transportation relations of the people living in the city. People prefer different types of transportation for different reasons. The most common main travel factors that affect travel preferences are comfort, cost, travel time, accessibility, safety (Hansson et al., 2019). The order of importance of these factors changes according to the economic situation of the country, the characteristics of the location. After the research, the accuracy of the hypothesis will be tested. In addition to main factors, age, gender, student/employee, education level and private car ownership factors are also external human-based factors and create changes in travel preferences.

Another factor on travel mode preferences is social network. According to Pike and Lubell (2016), social network is an important factor for travel mode preferences as it determines human and urban relations. This factor acts in two different ways as social networks affect daily activities, travel production and travel demand, and social relationships affect travel behavior. Changes in urban life after the Covid-19 Pandemic also affected the social network.

People move from place to place every day for urban activities such as business, shopping, entertainment, health, education. These activities form people's daily routines and therefore everyday life. According to Gardiner (2004), to understand Lefebvre's Everyday life, it is necessary to understand the repetitions and routines of daily life. Daily routine is an important part of city life and constitute a large part of transportation in the city which is called commuting. In the morning from home to work and from home to school; The travels to home from work and home from school in the evening are the compulsory travels that constitute a large part of the city transportation. In our research, we will consider home-based school/work and home-based social travels.

1.2. Aim of the Study

This study aims to examine, Covid-19 Pandemic effects on travel preferences. This examination is researched under two headings: factors on travel preferences, and pandemic effects on travel preferences.

There is quite a large literature on travel choices and accessibility analysis. However, Covid-19 Pandemic is new, so there is a lack of research about factors and

pressures in travel preferences during the pandemic period. This study contributes to the literature on how extraordinary conditions such as pandemics can affect travel preferences and urban mobility and sheds light on future studies.

Since the work and school travels are regular travels that can be more observable and modelled accurately, there are two different target groups determined in the study. These are students and employees. The main reason for choosing this target groups are that they are the groups whose daily routine travels are most affected during the Covid-19 period. Because they must go out to go to school or work as a daily routine.

The main hypothesis of the thesis is that the Covid-19 Pandemic has significantly affected the travel behaviors, travel preferences and the role of related factors. There are three research questions in this study. All questions focus on the common point, how the Covid-19 Pandemic has changed travel preferences. **Linked to this major hypothesis above, main research question is:**

1. Was the change created by the Covid 19 Pandemic in travel mode preferences significant?

The following sub-questions are:

1. Which factors has significant effect on travel mode preferences before and during the pandemic?
2. How strong were the effects of these factors?

Thus, the aim of this study is to examine how the factors and pressures affecting the travel preferences of students and employees change, the significance of this change and to shed light on transportation planning in similar scenarios that may repeat in the future. In the study, these travel preference types were examined: Travel mode preferences for school and work travels, travel time for school and work travels, travel mode preferences for social travels, travel time for social travels, weekly social travels. The thesis study covers city center of İzmir. Fahrettin Altay, Konak Pier, and Halkapınar transfer centers' locations cover the city center of İzmir.

1.3. Methodology

This thesis investigates the Covid-19 Pandemic effects on travel preferences. Since the main methodological approach is the before/during study, the study is examined in two periods, before and after March 11, 2020, when the first Covid-19 case was announced in Turkey. It was examined significance of the difference between before and during the pandemic periods.

In this study, literature review, data collection, and interpretation of the results from the collected data were completed, respectively. The literature review focused on three research questions. The target group of the thesis is students and employees. Fahrettin Altay, Konak Pier, and Halkapınar transfer centers were determined as study areas as they are the points where multiple travel modes meet and daily usage is high. Data were collected by conducting individual surveys in the field study. Data such as the number of students and employees in Izmir were obtained from İzmir Directorate of National Education and universities' official websites.

As main research methodologies, Chi Square Test method and McNemar-Bowker Test method were used in the study. McNemar-Bowker Test was used to evaluate the change in travel preference between before and during the Covid-19 pandemic. Chi-Square Test was used to evaluate the correlation of multiple factors and travel preferences. In these methods MS Excel, and SPSS program were used.

The scope of this study is limited to face-to-face surveys with 385 students and employees. Due to physical and methodological limitations in the analyses, the study could not consider to all social groups.

1.4. Structure of the Thesis

The remaining parts of the paper are structured in the following way: This thesis consists of 7 chapters. The thesis, which starts with introduction chapter, continues with literature review and method. The results are examined under 2 chapter, the findings are discussed in the discussion chapter, and finally the thesis concluded in the conclusion chapter.

In the first chapter, information is given about the concepts, research questions, method, and the scope of the thesis.

In the second chapter, the theoretical framework of the thesis is examined in 6 parts. The first two titles summarize the Covid-19 Pandemic effects on the world and Türkiye scale. In the third title, the Covid-19 Pandemic effects on urban transportation, in the fourth title the factors affecting the travel mode preferences, and in the fifth title, the discussions in the literature about the Covid-19 Pandemic effects on the travel mode preferences in the world are examined. In the 6th chapter, the Covid-19 Pandemic effects on the behavior of students and employees are examined. Afterwards, the literature was summarized and ended.

In the third chapter, the study site, methodology, data, and data collection method of the thesis are examined.

The fourth chapter, which is the first of the results chapters, the findings of the pandemic effects on travel preferences are examined. In the fifth chapter, how other factors affect the travel preference and what changes occurred during the pandemic period are examined.

In the sixth chapter, the findings in the results are discussed. In the seventh chapter results are concluded. In addition, this chapter includes limitations, spatial and political recommendations in the thesis.

CHAPTER 2

LITERATURE REVIEW

2.1. Covid-19 Pandemic in the World

COVID-19 is a member of the subfamily Coronavidae (CoV) of the family Coronavirinae, belonging to the order Nidovirales. Covid-19 is one of 7 common human coronaviruses [229 E, HKU1, MERS CoV, NL63, OC43, SARS CoV, COVID-19 (SARS CoV-2)] (Platto, Xue, & Carafoli, 2020). WHO (2020) states that the disease is caused by the SARS-COV-2 virus and affects the respiratory tract. The disease is passed from person to person in a mild or severe way and can lead to death. Elderly people and people who have or have had cardiovascular disease, diabetes, chronic respiratory disease, or cancer diseases are more disadvantaged. To prevent disease; WHO (2020) recommended personal precautions such as getting vaccinated, keeping 1 meter distance from other people, wearing a mask, staying away from closed and crowded environments, cleaning hands with soap or alcohol-based disinfectant, and being isolated. General symptoms observed in sick people are fever, cough, fatigue, loss of taste or smell, difficulty in breathing, chest, and back pain.

Covid-19 is an infectious disease that emerged in the Chinese province of Wuhan in late 2019 and spread worldwide. The response of the government to the pandemic that started in China was given only with the curfew declared on 2020 January 23. If these measures had been taken 1 week ago, 67% of the cases could have been prevented (Khanna et al.,2020). The disease was declared a worldwide pandemic by WHO on 12 March 2020. According to WHO's data on 16 August 2020, there have been a total of 21 294 845 cases and 761 779 deaths worldwide until that day (World Health Organization, 2020). Wet markets in the city of Wuhan were shown as the main outlet of the disease. The effect of the disease, which turned into a pandemic because of a person eating a bat sold in these markets, was enormous (Platto, Xue, & Carafoli, 2020). Considering China's market size, import and export capacity, it was inevitable that the pandemic would spread to other countries.

The pandemic, which is so effective in the world, has led to various changes in human life. According to Karataş (2020), pandemics are not only a disease, but also a social phenomenon that affects the individual and society. To reduce the effect and spread of the Covid-19 Pandemic, many countries in the world have started to implement quarantines and bans. This situation caused disruptions in fields such as agriculture, industry, tourism, and education (Beltekin, & Kuyulu, 2020). While most countries have taken such measures, countries like UK which is under the management Boris Johnson, have taken no action by following the laissez-faire approach. This policy of theirs increased the loss of life and created a Social Darwinism (Fuchs, 2020).

2.2.Covid-19 Pandemic in Turkey

According to WHO (2020), the first case of Covid-19 in Turkey was announced 11 March 2020. The first death due to Covid-19 in Turkey occurred on March 17, 2020 (Demirbilek, et al., 2020). After that, according to Karataş (2020), the Covid-19 Pandemic restrictions started with the decision to quarantine patients on January 24, 2020, for the first time in Turkey. The flight bans that started with China on February 3, 2020, continued with Iran on February 23, Italy on February 29, and mutual bans were imposed with various countries. After March 8, disinfection activities were started for the continuity of the use of public spaces and public transportation. The Covid-19 Pandemic effect on social life was felt when education was suspended in all educational institutions on March 16. The first partial curfew on April 3, 2020, put an end to the mobility in urban life for a while.

Several measures have been taken to prevent the spread of the disease, which also affects social life. One of the measures taken was the application of PCR Test and rapid diagnostic kits to people who suspect they are ill. At the same time, Provincial Pandemic Influenza Preparedness and Action Plans were prepared and provincial health directorates in each province were organized. The public was informed about hygiene, social distance, ways to prevent disease and symptoms of the disease through radio, television, and social media. To reduce the interaction between employees, applications such as flexible working hours and home-office were introduced in some sectors and public institutions. Administrative permits were granted to disadvantaged groups such as employees with chronic diseases or those over the age of 60 (Demirbilek, et al., 2020). On March 13,

2020; Schools were suspended for a week. Then, on March 23, 2020, online education was started and the necessary infrastructures for online education were provided to schools and universities. At the same time, academic calendars were extended to make up for lost time in education (Beltekin, & Kuyulu, 2020). The use of areas and events where human interaction is high and close, such as wedding halls, hairdressers, mosques, theatre, cinema, Turkish bath, swimming pools, concerts, are banned for a certain period (Demirbilek, et al., 2020).

2.3.Covid-19 Pandemic Effects on Urban Transportation

2.3.1. Urban Transportation

Tiwari (2006) defines the concept of urban transportation as the mobility of people or goods within the city. This study focused on human transportation in cities. Transportation of people in the city is provided by individual vehicles or public transportation vehicles, and the travel times and travel modes vary according to the cities. Urban public transportation systems vary according to the means of transportation and the mode of travel. While the public transportation systems on the road are buses and minibuses, the rail public transportation systems are divided into tram, metro, commuter's train. Maritime public transportation systems are ferry, ferryboat, and sea bus.

These systems provided in different ways have different advantages and disadvantages. While Akbulut (2016) talks about the advantage of road transport to enable door-to-door access, he also says that it has negative aspects such as environmental pollution, accidents, and traffic congestion. Also, he touches on the differences in travel modes, mentions that although travel modes such as bicycles and scooters are low in cost and environmentally friendly, their use depends on environmental factors. While the use of private car has advantages such as comfortable, fast, and door-to-door transportation compared to public transportation, it also has cost, parking problems, traffic problems and a negative environmental effect. While rail systems are good at meeting the transportation needs of very dense cities, the cost of construction is high. On the other hand, Skibinska (2011) states that maritime transportation is a fast mode of travel for coastal cities because it is low cost, safe and does not have traffic problems, but other travel modes are needed as an extra.

The number of daily travels in cities are increasing. Akman & Alkan (2016) state that transportation is one of the main problems of rapidly growing big cities and that public transportation is necessary for a more livable city. He defines public transportation as a transportation system that meets the travel needs of the public by carrying many people together. Akbulut (2016) tells that the working hours of public transportation systems vary according to the size of the vehicle, the cost of operation and the number of passengers. While high-capacity systems make more voyages during rush hours and become less frequent when the number of passengers is low, the number of voyages of low-capacity modes such as minibuses is flexible.

2.3.2. Everyday Life in Covid-19 Pandemic Period

Lefebvre (2014) defined "Everyday life, in a sense residual, defined by “what is left over” after all distinct, superior, specialized, structured activities have been singled out by analysis, must be defined as a totality". In addition, he says that everyday life encompasses all activities, differences, conflicts, that is, all human relations. The Covid-19 Pandemic has created great changes in people's daily lives and routines. It also, has caused deterioration in socio-political and economic relations at the global level, as well as in human psychology with the tragedy it has created (Zoumpourlis et al, 2020).

By Christian Fuchs (2020) "How have everyday life and everyday communication changed in the coronavirus crisis?" In his article seeking an answer to the question, he says that the coronavirus shatters humanity's political actions, political economy, and everyday life with the fear of death. With the Covid-19 Pandemic, people have experienced a radical change in their everyday lives. Since humans are social beings, they have to interact with each other. The coronavirus has moved these relationships from face to face to virtual environment. And this created sociality at a distance among people.

Also, this situation creates a broken at space-time relations of everyday life. The space-time balance in people's routines, such as working in the office at 9 in the morning, at 5 in the evening, spending time in the cafe after work, and doing an activity on the weekend, has been disrupted. People started to work from home now, and the relations between production-consumption areas, office and home became blurred (Fuchs, 2020). He compares David Harvey's (2005) concept of typology of social space by adapting it to the Covid-19 Pandemic period.

Table 2.1. David Harvey's typology of social space.
(Source: Harvey, 2005; Fuchs, 2020)

Typology Of Social Space by David Harvey			
	Physical space (experienced space)	**Representations of space (conceptualized space)**	**Spaces of representation (lived space)**
Absolute space	physical locale	symbols, maps, and plans of physical locales	locales as social spaces where humans live, work, and communicate
Relative space (time)	humans in a physical locale	symbols used and meanings created by humans in physical locales	humans as social actors acting in social roles
Relational space (time)	social relations of humans in a physical locale	language as social and societal structure	communicative practices that produce and reproduce social relations, sociality, and social spaces

Table 2.2. Typology of social space in the Covid-19 Pandemic Term.
(Source: Fuchs, 2020)

Typology Of Social Space in the Covid-19 Pandemic			
	Physical space (experienced space)	**Representations of space (conceptualized space)**	**Spaces of representation (lived space)**
Absolute space	the home as the supra-locale	plans and strategies of how to use the supra-locale of the home for the organization of everyday life	the home as the dominant social spaces and supra-social space where humans simultaneously organize multiple aspects of their life and work, convergence of absolute spaces in the home
Relative space (time)	humans stay predominantly in one locale, their homes	symbols used and meanings created by humans in the supra-locale of the home	convergence of humans' social roles in the supra-space of the home
Relational space (time)	social relations at a physical distance organized via communication technologies between home locales	language as social structure	the convergence of humans' communicative practices in the convergent space and under conditions of the convergent time of the home, mediation of the convergence of space-time by communication technologies

When we look at the table 2.1 and table 2.2, we see that the physical place that people need to be at certain times in daily life is now only their home. Social relations that take place in physical spaces are realized in homes during the Covid-19 Period, due to different communication technologies. The symbols, maps and plans of the physical space have evolved into how the house will be used for multiple purposes. While the purposes of working, living and entertainment are realized in different places under

normal conditions, this is compressed into a single place. This situation supports Lefebvre's (2002) idea that social changes change and suspend everyday life.

Findings from Vatavali et al (2020) article's, which investigates the pandemic effects on everyday life issues such as work, mobility, and urban space, show that the pandemic and quarantines affect their professional and economic lives. In the survey conducted within the scope of the study, the Covid-19 Pandemic effects and the restrictions that came with it on the everyday activities of the participants in general was investigated. 70.1% of their private life and 63.0% of their family life are affected between "moderately" and "highly"; the effects on professional life were high; and the chi-square test method revealed that there is a relationship between age and recreational activities, since the pandemic affects the young more than the elderly.

2.3.3. Urban Mobility in Covid-19 Pandemic Period

Mobility has an important role in the everyday life of modern society. The activities that people do in their daily lives for reasons such as work, entertainment, shopping, education, and health constitute the mobility in cities. According to Hjorthol (2010), since the character of today's modern society is speed and mobility, traveling and urban mobility are important concepts for a city. The rhythm of everyday mobilities transforms the built environment and infrastructure in cities and suburbs. This mobility consists of social relations (Jensen et al., 2015).

According to Fatmi (2020) analysis, the number of people's outdoor activities per person per day decreased by half from 3.33 to 1.62, and it is seen that this situation affects the transportation sector. These number probably coincide with the same amount of change in trip-making. On the other hand, there has been an increase in the number of transports in sectors such as health, education, law, society, government and sales and services. Outdoor activities in the research; work/school/, pick-up online order, recreation/social which includes recreation/visit family and friends/civic/religious activities, routine shopping, and household errands which includes personal business/household errands/pick up or drop off It has been gathered under the titles of household members/health care/other activities.

Also, when we look at the research of Mogaji (2020), we can see that the Covid-19 Pandemic effects on transportation in Lagos state of Nigeria is reflected in the traffic

congestion, the increase in the cost of travel, the inadequacy of the mode of travel, and the decrease in urban mobility.

Kazhamiakin et al (2021) say that the Covid-19 Pandemic has disrupted the daily rhythm in the city by forcing people to distance themselves from each other. At the same time, it is seen that the use of private vehicles has increased by putting public transportation in the second plan for safety reasons in travel preferences. In the study of Tirachini and Cats (2020) in which they analyze the critical problems related to the use of public transport during the Covid-19 pandemic, and in public transport in a crowded city with limited space; says that contact surfaces such as seats, handrails, doors and ticket machines accelerate the spread of the virus. In addition, Tarasi et al. (2021), also say that public transportation can be risky for health during the pandemic period, as it is a congested and crowded place, so the importance and demand of travel modes such as walking and cycling may increase during the pandemic period.

It is seen that Tarasi et al. (2021) examined the Covid-19 Pandemic effects on transportation in the cities of Chania with a population of 61,275 and Rethymno with a population of 34.30 on the Greek island of Crete in 4 stages. In the article, these stages were divided into January-February as the pre-pandemic period, the period when the first quarantine and restrictions were announced, April as the curfew period, and the summer period as the post-quarantine period. When we look at the results, it is seen that there is a sharp decrease in the use of public transportation in the first three stages, an increase in private cars and walking, while the number of general travels decreases. In the fourth stage, while private cars came to the fore in urban transportation, the rate of walking decreased, and the use of public transportation increased. Thus, dividing the pandemic era into various stages would be useful in the analyses.

2.4. Factors Affecting Travel Preferences

People travel for various purposes in everyday life, and they prefer various modes of travel on their travels. While the diversity of travel modes varies spatially, people choose among the travel modes in the environment they live in. There are main factors such as comfort, cost, travel time, accessibility, safety that affect travel mode preferences (Hansson et al., 2019).

In Jain et al.'s (2014) analysis of travel preferences for public transport use in un-Delhi, India, it was revealed that 36% of people care about safety, 27% on reliability, 21% on cost and 16% on comfort. As another example, Sam et al. (2014) evaluated the factors that affect the public transportation service choices of students at the University of Cape Coast in Ghana. Study surveys were conducted at five main bus terminals in the city. It was revealed that 35.2% of the students gave importance to affordability, 25% to safety, 21.6% to comfortability, and 18.2% to reliability.

Abdullah et. al. (2020) measured the effect of the Covid-19 Pandemic on travel behavior. When we look at the effects of external factors on mode choice worldwide, it was interestingly seen that men used public transportation more than women before the pandemic, and that men preferred private car more than women during the pandemic period. Also, it has been observed that private car ownership is an important factor that increases the use of private car in both periods.

According to the study of Ulahannan, & Birrell (2022) in London, UK, after the COVID-19 pandemic, while the use of public transport mode decreased, the use of private cars increased. In addition, among the factors affecting the transport mode preferences, it was the travel cost that had the greatest effect. After the coronavirus pandemic, the use of public transport has decreased worldwide due to the risk of transmission, social distancing, and lockdown.

The Covid-19 Pandemic effects will continue after the pandemic has passed. The reason of that the changes in daily life are embedded in people's lifestyles and norms of societies. Beliaev et al (2020) say that the pandemic has changed the importance of the factors affecting travel preferences, and avoiding the risk of infection comes to the fore rather than factors such as price, comfort, avoidance of traffic, and privacy. He says this situation increases the use of private vehicles and micro-mobility options as electric scooters. In their research, they examined the transportation network, private cars, railway, pedestrian, taxi, and car calling services over safety and efficiency factors and tried to choose the optimum travel mode according to cost, travel time and infection risk.

Görçün (2018) states that the individuals' urban travel preferences vary according to the region they live in and their own opportunities, and everyone's optimum travel mode is different because the order of importance in travel factors is different for everyone.

When we examine the Norwegian Oslo example, we see that people evaluate their travel preference factors according to the vehicle they use. Out of 512 participants, 218

preferred public transportation, 169 preferred private mode, and 125 preferred motorcycles and scooters. While passengers using public transport consider the safety factors such as accidents, violence, and crimes higher, it seems to be less important for passengers using private mode. In addition, gender, driver's license, or vehicle ownership appears to have a significant effect on travel preferences (Roche-Cerasi et al., 2013)

2.5. Covid-19 Pandemic Effects on Travel Preferences in the World

As a result of the Covid-19 Pandemic and lockdowns, mobility and travel preferences in urban areas have been affected. The pandemic effects on travel preferences varies from city to city in the world. This effect depends on the planning of cities, the diversity of travel modes, and the resilience of transportation plans. We will examine the Covid-19 Pandemic effect on travel preference through world examples.

Erbaş (2020) investigated how the behaviors of public and private office workers between the ages of 20-65 in public transportation and travel preferences have changed with the pandemic measures taken. In the study, it was observed that the Covid-19 Pandemic generally reduced urban mobility, and practices such as curfews applied to different age groups, home-office working method, distance-education changed the diversity of people in urban mobility. In a study by Pišot, et al (2020) on people aged 15-82, conducted in nine European countries, it was concluded that the mobility was greatly reduced in everyday life of people during the Covid-19 period. According to the research, people sleep 30 minutes more, move 50% less, look at the screen 65% more, walk 43% less, do 24% less exercise in the Covid-19 period than before. On the other hand, they eat 44% more regularly and consume less cigarettes and alcohol.

In Vatavali et al.'s (2020) study on impact of Covid-19 on urban everyday life in Greek cities, Covid-19 effect on mobility, travel preferences were examined with Chi-square Test. Before the pandemic it was seen that, participants preferred 57,4% private car, 19.7% public transportation, 6.2% motorcycle, 2.2% car sharing, 0.7% taxi, 1.3% bicycle, and 12.4% walking in their home-based work travel. 90.3% continued their preference before the pandemic. A slight increase in cycling and walking was observed during the pandemic. Before the pandemic, the travel time of 50% of the participants was less than 30 minutes, 32.7% was 30-60 minutes, 10.5% was 60-90 minutes, 6.9% was more than 90 minutes. There has not been much change in home-based work travel times

during the pandemic period. However, during the pandemic period, it was seen that 66.1% of the participants reduced the frequency of home-based work travel.

In the case of State of Rio Grande do Sul and southern Brazil, which is based on the number of travels in the Covid-19 Pandemic period, public transportation use 73%, private car use 22%, motorcycle use 9.7%, and car sharing service 18.5% was decreased during the pandemic period. At the same time, it is seen that individual modes such as private car, motorcycle and car sharing service are preferred despite the decreasing number of travels during the pandemic period (Oestreich et al., 2023).

In a similar fashion, in the study examining travel mode preferences before and during the pandemic in Santo Domingo, Dominican Republic, it was observed that the preference for private car increased from 51.3% to 81.56%, public transportation preference decreased from 40.95% to 8%, the preference for walking and cycling increased from 1.42% to 2.23% during the pandemic (La Paix, 2021).

When we look at the impact of the pandemic in China on travel behavior, it was observed that public transportation usage decreased from 54% to 40%, bicycle usage increased from 8% to 17%, private car usage increased from 10% to 15%, and the preference of walking remained at 28% (Huang et al., 2020).

In another study of "Transport mode use during the COVID-19 lockdown period in Germany" on Germany, the changes caused by the Coronavirus pandemic on individual mobility actions were investigated. In this study, when the changes in the use of bicycle, car and public transportation types are examined, it is seen that people are directed to individual travel modes and mostly private cars during the lockdown period. We can see there is a decreasing in general mobility in figure 2.1. Also, if we compare travel modes among themselves, while there is a slight decrease in public transportation during the lockdown period, there is a higher increase in the use of bicycle and private car (Eisenmann, et al., 2021).

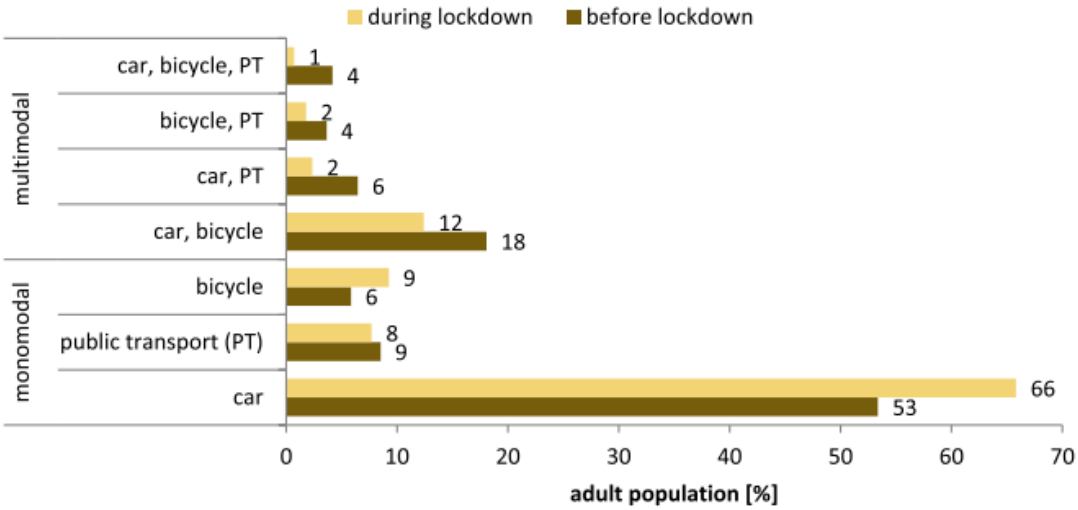

Figure 2.1. Transport preferences changes between before and during the coronavirus lockdown in Germany in spring 2020 (Source: Eisenmann, et al., 2021).

Abdullah et. al. (2020) measured the Covid-19 Pandemic effect on travel behavior and conducted surveys online worldwide, revealing that travel purpose, mode preference, and travel frequency are affected by Covid-19. The study compares travel preference and factors affecting mode choice before and during the pandemic with McNemar-Bowker Test. While 36% used public transportation before the pandemic, this rate decreased to 13% after the pandemic. Private car preference increased from 32% to 39%. Walking preference increased by 7%. It was revealed that 58% of the participants chose work travel as a primary travel before the pandemic, and 44% of them shopping travel as a primary travel after the pandemic. In addition, the work travel distance has decreased from 3.6km to 2.6 with the effect of the pandemic, while the home-based school travel distance has decreased from 15.5km to 12.9km, and shopping travels decreased from 4.4km to 1.5km.

If we compare the mode preferences, there was no significant mode and travel time change during the pandemic period, as the rate of private vehicle use in work travels is higher than in public transportation in the Greek example. In the case of Brazil, private car and ridesourcing service were the most preferred modes of travel during the pandemic, while public transport decreased. In the example of the Dominican Republic, the most preferred mode of travel during the pandemic period was private car, and the serious decrease in public transportation preference reflected an increase in private car preference. In the case of Germany, the decrease in public transportation preference during the pandemic period was reflected as an increase in private car preference. In the

Chinese example, the decrease in public transportation preference compared to others caused an increase not only in private car but also in cycling and walking preferences. In the study conducted around the world, a decrease in the preference of public transportation and an increase in the preference of private car and walking were observed. In general, while there was no change in travel time in work travels, a decrease in travel time was observed in social travels.

2.6. Covid-19 Pandemic Effects on Students and Employees Travel Behaviors

The Covid-19 Pandemic has deeply affected areas such as education, health, transportation, business life, social life, and urban life. Various changes and new solutions emerged from this interaction. In this section, we will focus on changes and innovations in education and working order. In the world trying to get used to living with the pandemic, a new order was tried to be created with restrictions, precautions, and bans. The groups most affected by these restrictions are people who have to go out daily. Therefore, this study focuses on the working population and students.

After the emergence of the Covid-19 Pandemic, the health concerns of people forced them to various changes in their lives. The first of these is the online education model. Although online meeting programs existed before the pandemic, they were not in demand. The online education model has been a solution to prevent schools from being closed after the measures and restrictions taken in the Covid-19 Pandemic period. Pratama et al. (2020), in his article on the changes created by Covid-19, says that online meeting applications provide a convenience for the continuity of their education without the need for participating the activity, for more than 570 million students after measures and restrictions. Although health is at the forefront in this period, continuing education is an important issue. Because education constitutes the human capital of the future population (Beltekin, & Kuyulu, 2020). According to UNESCO (2022), more than 1.5 billion students have been negatively affected by the pandemic, and the 2030 Education Agenda goals have been moved away.

2.7. Summary

This chapter describes the main concepts in the thesis, associated with the research questions. The first two titles explain how the Covid-19 Pandemic affects the world and Turkey and the precautions taken. Although the pandemic that started in China emerged later in Turkey, it can be said that the measures taken were insufficient and the pandemic turned into a social phenomenon affecting the whole world.

In the third chapter, the concepts of urban transportation, everyday life, urban mobility under the pandemic effects on urban transportation and the pandemic effects on these concepts were defined. Although urban transportation is defined as the mobility of people and goods in the city, this study examines the mobility of people in the city. The concept of everyday life is examined with David Harvey's (2005) concept of social space, and the definitions of Henri lefebvre and Christian Fuchs. We can define the concept of everyday life as all human activities and movements of people in the city. In addition, we can summarize the pandemic effects on everyday life as the disruption of people's daily routines, the spatial transformation of social relations, the change in the purposes of use of the residentials, and the decrease in urban mobility.

In the fourth title, the factors of travel preferences, and in the fifth title, the pandemic effects on travel preferences were explained. The travel factors of the travel preference are comfort, cost, travel time, accessibility, safety. However, it is important to examine the human-based factors on travel preference, to interpret preference differences and to understand the travel behaviors of people with different characteristics. These factors are age group, gender, student/employee, education level, and private car ownership. The Covid-19 Pandemic effects on travel preference and other factors is included in the results of the study.

In the last title, there is how the daily life of students and employees, the target groups of the study, has been affected by the pandemic. As a solution to the pandemic conditions, online education for students and home-office working systems for employees were presented as a solution. A summary table of the concepts in the literature review is given below.

Table 2.3. Summary table of concepts from literature review.

Concepts	Findings/Inferences	Author(s), Year
Covid-19 Pandemic	COVID-19, a member of the Coronavirinae family of the order Nidovirales, subfamily Coronavidae, is one of seven common human coronaviruses. Wet markets in the city of Wuhan were shown as the main outlet of the disease.	Platto, Xue, & Carafoli, 2020
	Covid-19 is caused by the SARS-COV-2 virus and affects the respiratory tract and causes death. Elderly and sick people are at a disadvantage. The disease was declared a worldwide pandemic by WHO on 12 March 2020.	WHO, 2020
	The implemented quarantines have caused disruptions in areas such as agriculture, industry, tourism, and education.	Beltekin, & Kuyulu, 2020
	The practices of governments that wanted to create social immunity by not taking precautions created a Social Darwinism.	Fuchs, 2020
	Pandemics are not only a disease, but also a social phenomenon that affects the individual and society.	Karataş, 2020
	The first case in Turkey was announced on March 11, 2020, and the first death was announced on March 17, 2020.	Demirbilek, et al., 2020
Urban Transportation	Urban transportation is the mobility of people or goods within the city.	Tiwari, 2006
	Private vehicle is more comfortable and faster than public transportation, but parking, traffic and environmental effect problems are more. Bicycles and scooters are eco-friendly, low-cost, but challenging modes of travel in the city.	Akbulut, 2016
	Maritime transport is a low-cost, safe and non-traffic-free mode of travel for coastal cities, but where other modes of travel are needed.	Skibinska, 2011
	One of the main problems of rapidly growing big cities is transportation. Promoting the use of public transportation in urban transportation is important.	Akman & Alkan, 2016
Everyday Life	"Everyday life, in a sense residual, defined by “what is left over” after all distinct, superior, specialized, structured activities have been singled out by analysis, must be defined as a totality". Everyday life encompasses all activities, differences, conflicts, that is, all human relations.	Lefebvre, 2014
	The coronavirus shatters humanity's political actions, political economy, and everyday life with the fear of death. With the Covid-19 Pandemic, people have experienced a radical change in their everyday lives. Also, this situation creates a broken at space-time relations of everyday life. This situation supports Lefebvre's (2002) idea that social changes change and suspend everyday life.	Fuchs, 2020
	Pandemics and quarantines are affecting professional and economic lives. According to the findings, 70.1% of their private life and 63.0% of their family life are affected between “moderately” and “highly”.	Vatavali et al., 2020
	According to the research, people sleep 30 minutes more, move 50% less, look at the screen 65% more, walk 43% less, do 24% less exercise in the Covid-19 period than before. On the other hand, they eat 44% more regularly and consume less cigarettes and alcohol.	Pišot, et al., 2020

(Cont. on the next page)

(Table 2.3. Cont.)

Urban Mobility	**Since the character of today's modern society is speed and mobility, traveling and urban mobility are important concepts for a city.**	**Hjorthol, 2010**
	The rhythm of everyday mobilities transforms the built environment and infrastructure in cities and suburbs. This mobility consists of social relations.	Jensen et al., 2015
	According to Fatmi (2020) analysis, the number of people's outdoor activities per person per day decreased by half from 3.33 to 1.62.	Fatmi, 2020
	According to analysis, there is a sharp decrease in the use of public transportation in the first three stages, an increase in private cars and walking, while the number of general trips decreases. In the fourth stage, while private cars came to the fore in urban transportation, the rate of walking decreased, and the use of public transportation increased.	Tarasi et al., 2021
Travel Preferences	Individuals' urban travel preferences vary according to the region they live in and their own opportunities, and everyone's optimum travel mode is different because the order of importance in travel factors is different for everyone.	Görçün, 2018
	The pandemic has changed the importance of the factors affecting travel preferences, and avoiding the risk of infection comes to the fore rather than factors such as price, comfort, avoidance of traffic, and privacy.	Beliaev et al., 2020
	Comfort, travel cost, travel time, accessibility, safety are factors of travel mode preferences.	Hansson et al., 2019
	According to analysis, 36% of people care about safety, 27% on reliability, 21% on cost and 16% on comfort while travelling.	Jain et al., 2014
	According to analysis, 35.2% of the students gave importance to affordability, 25% to safety, 21.6% to comfortability, and 18.2% to reliability.	Sam et al., 2014
	In the 2030 projection it is expected that, 35% of home-based work travels, 20% of home-based school travels, 3.1% of home-based university travels, 38% of other home-based travels, 3.9% non-home -based travels.	Dişli, et al., 2017

Travel preferences are one of the important components of urban transportation. Travel preference analysis should be done while making a city's transportation plan. Travel preference is affected by various factors. As a result of the literature review, safety, comfort, cost, health, and travel time were evaluated as main travel factors, while age group, gender, student/employee, education level, private car ownership was considered as external factors. The Covid-19 Pandemic is a dominant factor on everyday life. Therefore, in this study, pandemic effect on the travel preference is examined.

CHAPTER 3

METHOD

3.1. Theoretical Framework: Focus Area and Statement of the Problem

In the literature chapter, the examination of the literature focused mainly on 2 issues: First one is, the Covid-19 Pandemic effects on travel preferences. Second one is about the effects through which basic choice factors on travel preferences. In the literature analysis, how these two issues were before Covid-19 and how they changed after Covid-19 were examined. The analyzes in this thesis, which focus on these two issues, aim to create an analysis for the necessary arrangements to be made in urban transportation in extraordinary situations such as pandemics that may occur in the future.

3.2. Aim & Objectives

In general terms, the study aims to investigate significance of the Covid-19 Pandemic effects on travel preferences.

The primary aim of the thesis is to examine how the factors and pressures affecting the travel preferences of students and employees, and to shed light on transportation planning in similar scenarios that may occur in the future. In other words, this thesis states that urban transportation should be resilience against extraordinary scenarios so that people's daily activities are not disrupted. Also, the thesis aims to show the changes in passengers' travel behaviors in such scenarios. To achieve the main purpose, research questions were determined in line with the main hypothesis.

3.3. Hypothesis

As a result of the literature review, 1 main hypothesis and 2 sub-hypotheses were stated.

The main hypothesis of the thesis is that the Covid-19 Pandemic has significantly affected travel preferences of students and employees.

Sub-hypothesis of the thesis is that the Covid-19 Pandemic influenced significant changes from over the travel factors of employees and students.

3.4. Study Area

The number of daily travels and travel purposes are important to determine the transportation characteristics of cities. In this way, the capacity needs of the travel modes in the city can be determined.

If we look at the table 3.1, we can see the number of daily travels in the city of İzmir in 2015 and in the 2030 projection. This study is important because it contains data for travel routes throughout the city of Izmir. It is foreseen that the number of daily travels in İzmir, which has an increasing trend, will double in 2030. If we look at Table 2.3 for 2015, it is seen that home-based work travels are 31.8%, home-based school travels are 21.9%, home-based university travels are 2.7%, other home-based travels are 39,6%, non-home-based travels are 3,8%. In the 2030 projection it is expected that, 35% of home-based work travels, 20% of home-based school travels, 3.1% of home-based university travels, 38% of other home-based travels, 3.9% non-home-based travels. Most urban travels are home-based in İzmir. When we look at the table, we can say that education and work-oriented travels have a high rate and have an important place in travel purposes (UPI, 2017).

Table 3.1. 2015 and 2030 projection of İzmir city daily passenger numbers according to their routes (Source: UPI, 2017).

Travel Type	**Daily Travel Numbers**	
	2015	**2030**
Home-based work travel	1.874.142	3.584.658
Home-based school travel	1.288.748	2.037.593
Home-based university travel	163.538	320.285
Home-based others travel	2.332.543	3.894.426
Non-home-based travel	224.416	405.115
Total	5.883.387	10.242.076

Table 3.2 Gross mobility rate of İzmir for the years 2015 and 2030.
(Source: UPI, 2017)

	Population and Travel Numbers	
	2015	**2030**
Population	3.920.224	6.208.056
Total daily travel number	5.883.387	10.242.075
	Gross Mobility Rate	
Home-based work travel	0,48	0,57
Home-based school	0,33	0,33
Home-based university	0,04	0,05
Home-based others	0,59	0,63
Non-home-based	0,06	0,07
Mobility rate	1,50	1,65

Gross mobility rate according to travel types obtained from the ratio of the number of daily travels to the population in Izmir is shown in table 3.2. “Gross Mobility Rate” is the total number of travels made for a specific purpose (home-based work, home-based school, home-based university, home-based other and non-home-based) divided by the entire population. It is an important indicator for determining the purposes of daily travel in cities. According to this analysis, the number of daily travels per person in İzmir will increase from 1.5 to 1.65 in 2030. This increase is expected to be in home-based work travel and home-based other travels. In both periods, the highest daily travel rate is seen in home-based work travel, home-based school travel and home-based-other travel. Also, it is stated that the regions producing the highest number of travels in İzmir are in the center (UPI, 2017).

Therefore, in this study, home-based work travel, home-based school travel and home-based social travel are examined.

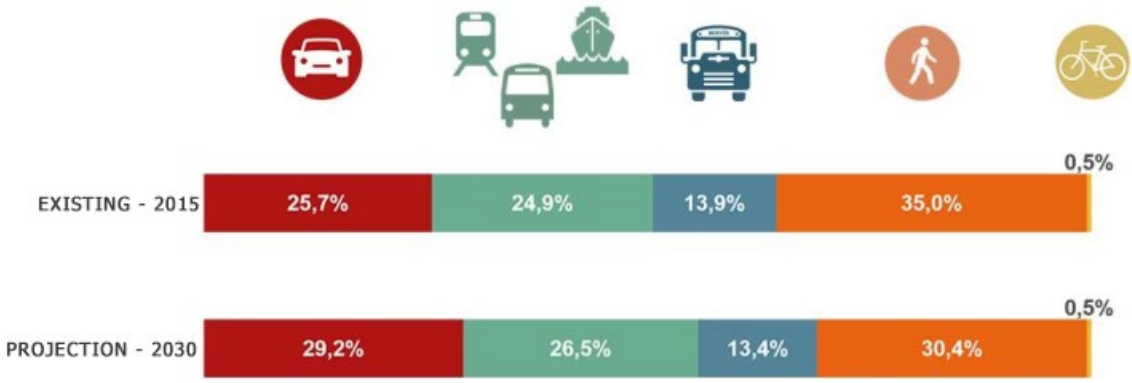

Figure 3.1 İzmir 2015 and 2030 travel mode preferences projection.
(Source: UPI, 2017)

If there is no intervention, the change in the use of travel mode in the city of Izmir will be experienced as in the figure 3.1. It is expected that there will be a high increase in private car use and a high decrease in pedestrian and bicycle (UPI, 2017). There are 30 districts in İzmir. With these districts, the surface area of İzmir is 11906.85 km2 (İBB, 2020). The population of the İzmir is 4462056 in 2022 (TUIK, 2022). In the table 3.3, the districts are divided into central districts and peripheral districts.

In the table 3.3, it is seen that the population is concentrated in the central districts in İzmir (TUIK, 2022). It is expected that the population density in the center will cause the human activities in this region to be more than other regions and the travels for business, education and social activities are expected to be higher according to these activities rate. As a supporting argument for this, in the Izmir 2030 Transportation Masterplan (figure 3.2), which covers the north, south, east, and west directions of the Izmir Center, it has been observed that the interaction between the central ends and the number of travels is higher than overall İzmir's average. It is projected that the north, center, traditional center, and center east will be the regions that generate the most travels. If we look at the characteristics of these regions, the population size of the center, north and center-east is high. Because of the industrial density in the north, there is a concentration of commuting. The traditional center, on the other hand, attracts travel as it is a region where trade and entertainment activities are concentrated (UPI, 2017).

Table 3.3 Populations of İzmir's central districts and peripheral districts in 2022. (Source: TUIK, 2022)

	Districts	**Population**	**Total**
Central Districts	Balçova	80721	2966488
	Bayraklı	298519	**66,49%**
	Bornova	454470	
	Buca	522404	
	Çiğli	214065	
	Gaziemir	137754	
	Güzelbahçe	37753	
	Karabağlar	479338	
	Karşıyaka	346264	
	Konak	332277	
	Narlıdere	62923	
Peripheral Districts	Aliağa	104828	1495568
	Bayındır	40073	**33,51%**
	Bergama	105754	
	Beydağ	12030	
	Çeşme	48924	
	Dikili	47360	
	Foça	34946	
	Karaburun	12200	
	Kemalpaşa	114250	
	Kınık	28694	
	Kiraz	43510	
	Menderes	106173	
	Menemen	200904	
	Ödemiş	132740	
	Seferihisar	54993	
	Selçuk	38151	
	Tire	87462	
	Torbalı	207840	
	Urla	74736	
All Districts	**Total**	4462056	4462056 **100%**

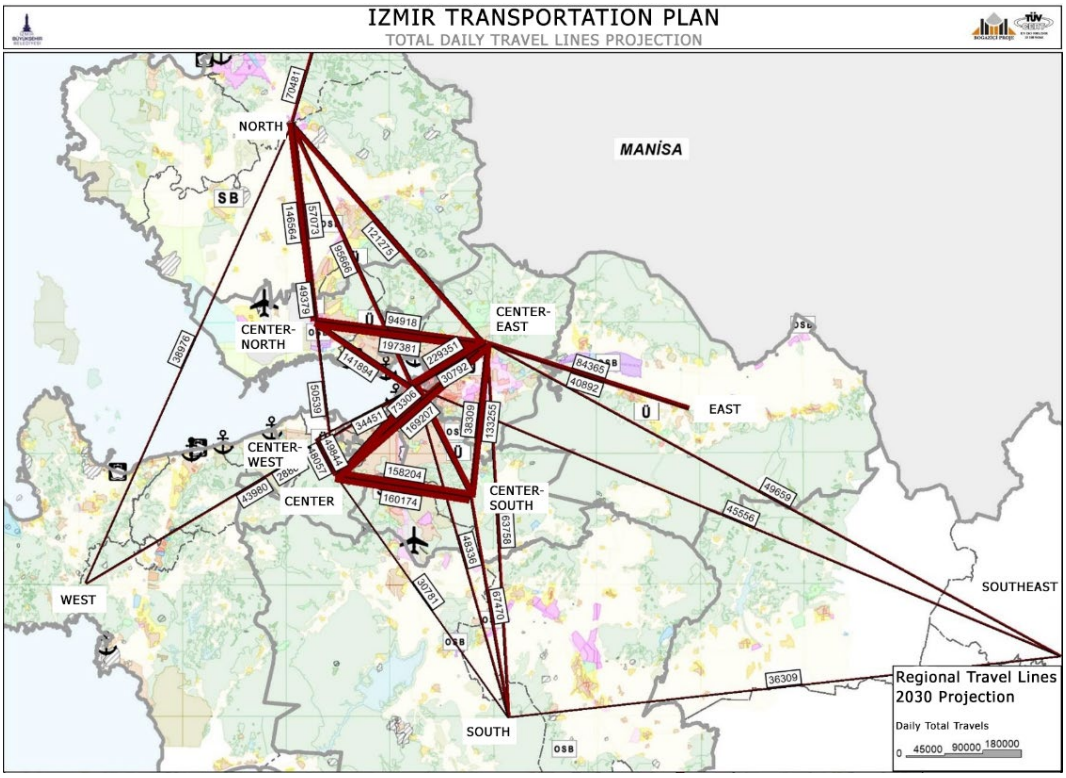

Figure 3.2 Number of regional trips expected in 24 hours in İzmir 2030.
(Source: UPI, 2017 adopted by author)

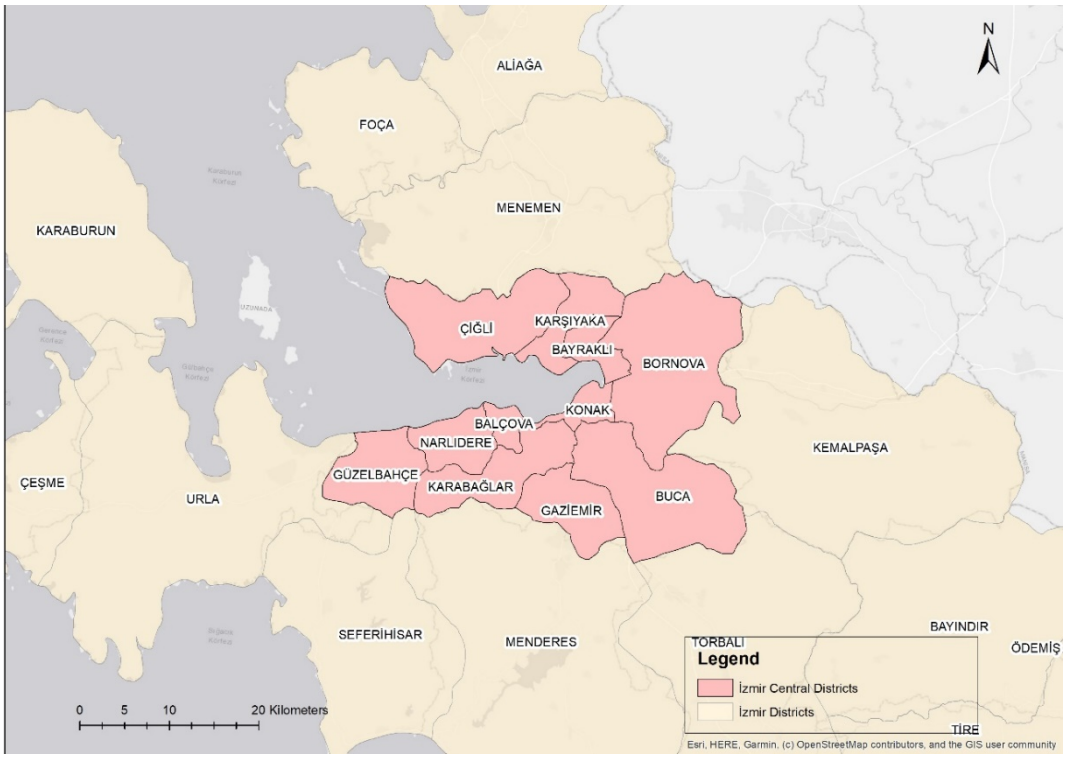

Figure 3.3 Study area: İzmir central districts.

Since the population and the density of business and educational activities in Izmir center are higher than other regions, the number of travels in the center is higher than periphery. The study area has been determined as the central districts of İzmir, as seen in figure 3.3, due to reasons such as the high population, the high human activities, and the high transportation activities.

3.5.Data Sources and Data Collection Methods

In this study, the survey method, which is the primary data collection method, was used as the main data collection method. The survey is carried out by simple random sampling method among students and employees. In addition, this study is a cross-sectional design study Izmir example, since the survey data was collected once, and each participant answered questions once. The data collection method provides the opportunity to compare the collected survey data with different dataset. Another data collection method used in the study is to analyze statistical data from the internet, which is a secondary data collection method. With this method,

- Izmir districts population data from TUIK
- Number of primary and high school students in İzmir central districts from İzmir Directorate of National Education
- Number of University students from websites of Ege University, Dokuz Eylül University, İzmir Institute of Technology, Katip Çelebi University, Bakırçay University, İzmir Democracy University, İzmir University of Economics, Yaşar University, İzmir Tınaztepe University
- Number of employees in Izmir from Izmir Chamber of Commerce
- Location data and map base from ArcGIS Online, and OpenStreetMap
- Demographic, economic, travel preferences data from survey

3.5.1. Survey Data Collection

The scope of the study is İzmir Central districts. Güzelbahçe, Narlıdere, Karabağlar, Balçova, Gaziemir, Buca, Konak, Bornova, Bayraklı, Karşıyaka, and Çiğli form the central districts of İzmir.

In Figure 3.4, the existing and recommended transfer centers according to UPI, and selected transfer centers in this thesis are seen. Transfer centers are points where people from all over the city start, end to travel or change their travel mode while travelling. Among the Transfer Centers, those with heavy rail system, light rail system, bus, *dolmuş* travel modes together were selected. Looking at this analysis, Fahrettin Altay, Konak Pier, and Halkapınar Transfer Centers contain the most travel mode variety.

When choosing the transfer centers, it was considered that they are the intersection point of heavy rail, light rail, bus systems and sea transportation. Although there is no sea transportation at Halkapınar transfer center, it was chosen because it contains two different heavy rail systems, namely Metro and Izban, unlike other transfer centers. In addition, these three transfer centers are in locations covering the city of Izmir. These provide a more inclusive study by conducting questionnaires with a wider variety of people around these three transfer centers. In this context, the areas where the questionnaires will be conducted have been determined as Fahrettin Altay Transfer Center, Konak Pier Transfer Center and Halkapınar Transfer Center as seen in figure 3.4.

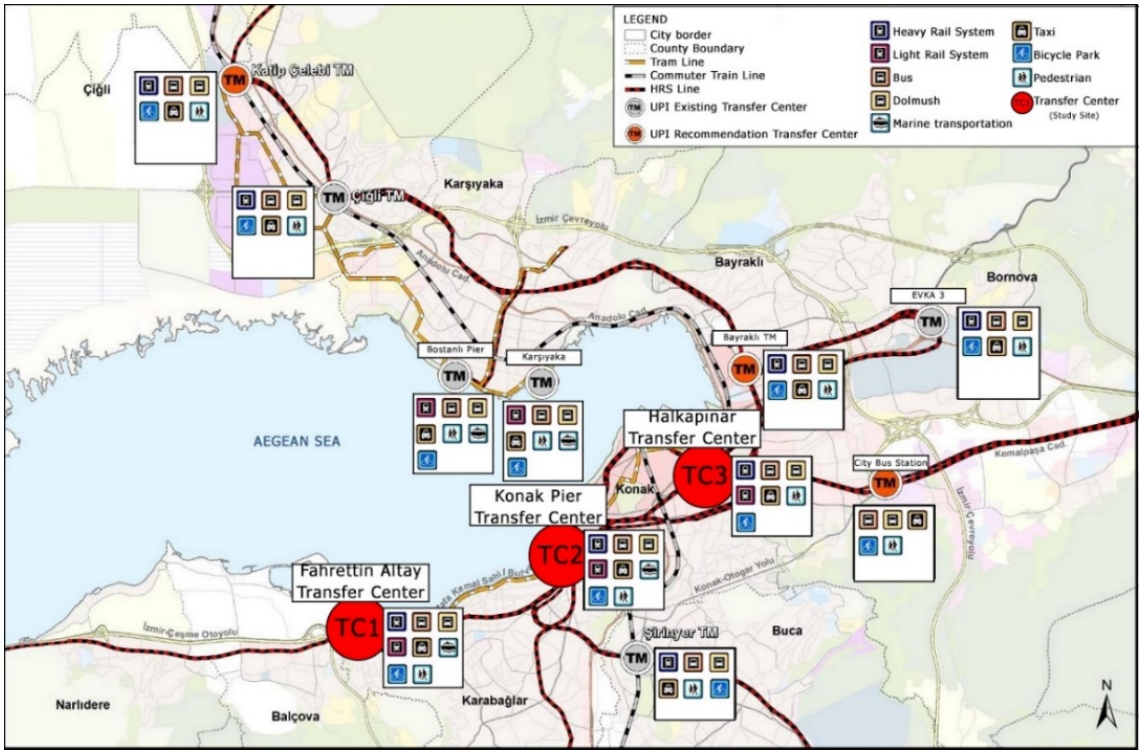

Figure 3.4 Transfer centers and travel modes.
(Source: UPI, 2017 adopted by author)

Fahrettin Altay is an important transfer center connecting the west of Izmir to the center (figure 3.5). It is the intersection point of five different public transportation systems: metro, tram, ferry, bus and *dolmuş*. Passengers traveling to home-based work and home-based school change their mode of transportation here. İstinyePark Shopping Center is a factor that increases the number of social travels in this region.

Figure 3.5 Transportation systems around Fahrettin Altay transfer center.

Konak Pier is an important transfer center connecting the two opposite shores of Izmir (figure 3.6). It is the intersection point of five different public transportation systems: metro, tram, ferry, bus and *dolmuş*. In addition, its wide shore allows for walking and cycling travels. Passengers traveling to home-based work and home-based school change their mode of transportation here. The historical Kemeraltı bazaar is a factor that increases the number of social travels in this region.

Figure 3.6 Transportation systems around Konak Pier transfer center.

Halkapınar is an important transfer center connecting the east of İzmir to the center (figure 3.7). It is the intersection point of five different public transportation systems: metro, Izban, tram, ferry, bus and *dolmuş*. Unlike other transfer centers, it is a point where two heavy rail systems such as Metro and Izban meet. Passengers traveling to home-based work and home-based school change their mode of transportation here.

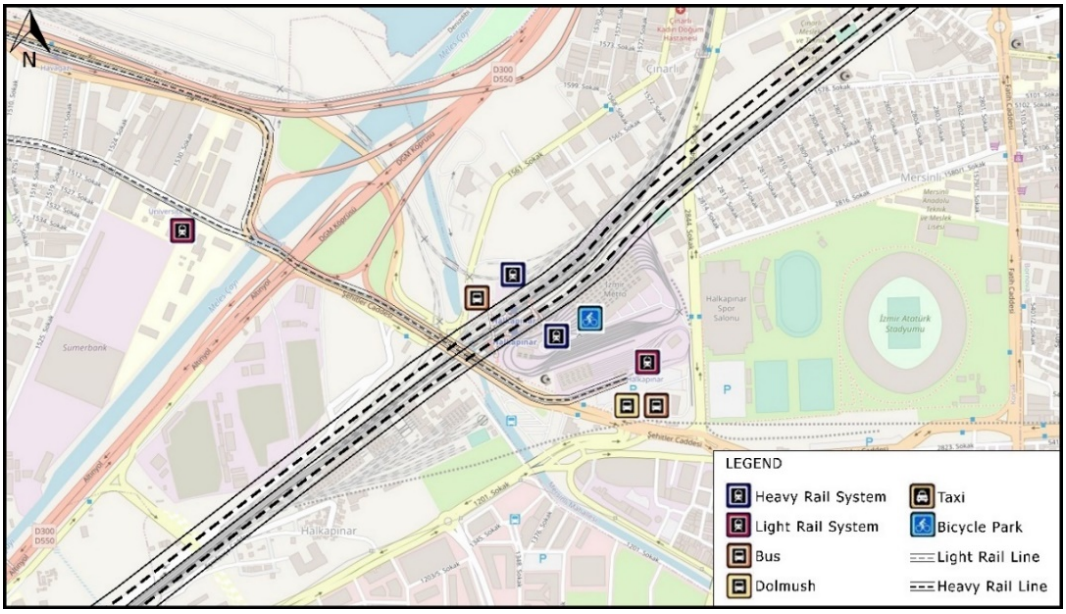

Figure 3.7 Transportation systems around Halkapınar transfer center.

Since the target groups of the study consists of employees and students, the number of employees in İzmir, the number of students in universities, high schools, primary schools are included in the formula while calculating the number of surveys. The data about the number of employees was obtained from the Izmir Chamber of Commerce, the number of students data obtained from the Izmir Provincial Directorate of National Education, and the number of university students from the websites of universities in Izmir. Since the Izmir Central Region is within the scope of the study, the Central districts data are used.

The first group researched to determine the sample size is primary and high school students in the central districts of İzmir as seen in table 3.4. From the data on the number of students affiliated to the MEB in İzmir, only the number of students in İzmir Central districts was used. The total number of students affiliated to the Ministry of National Education in the central districts of İzmir is 463122.

Table 3.4 Number of students until university in İzmir central districts.
(Source: T.C. MEB, 2022)

İzmir Central Districts	**Number of Students (Primary and highschool)**
Güzelbahçe	12.033
Narlıdere	6.258
Karabağlar	74.791
Balçova	7.416
Gaziemir	24.435
Buca	76.253
Konak	60.701
Bornova	83.153
Bayraklı	43.726
Karşıyaka	40.041
Çiğli	34.315
Total	463.122

To determine the sample size, the total number of university students in İzmir, which is the second group, was examined as seen in table 3.5. The total number of

university students in İzmir is 181731. This number is added to the number of people in the target groups for the number of surveys formula.

Table 3.5 Number of university students in İzmir.

Universities in Izmir	**Number of University Students**
Aegean University	57.714
Dokuz Eylul University	65.451
Izmir Institute of Technology	6.769
Katip Celebi University	18.110
Bakircay University	6.659
Izmir Democracy University	7.335
Izmir University of Economics	9.680
Yasar University	8.678
Izmir Tinaztepe University	1.335
Total	181.731

The third group investigated to determine the sample size is the number of employees living in the central districts of İzmir. Since the data of İzmir Chamber of Commerce is actual data, the number of İzmir employees is taken from this source. According to the data of İzmir Chamber of Commerce (2022), the number of employees in İzmir is 1.491.000. By proportioning this number to the population of İzmir Central Districts, the number of employees living in İzmir Central Region was found to be 1.007.534.

Table 3.6 Number of people in the target groups.

Number Of People in The Target Groups	
Number of employees in Izmir central districts	1.007.534
Number of students in İzmir central districts	644.853
Total	1.652.387

The target groups were calculated as 1652387 people from the total number of 1007534 employees and 644853 students.

As mentioned previously, in Vatavali et al.'s (2020) study on the urban everyday life of Covid-19, people over the age of 18 living in urban areas of Greece were studied. The surveys were conducted in different parts of the city at different times of the day and on different days of the week. A simple random sampling formula was used when determining the sample size (Vatavali et al., 2020; Al-Subaihi, 2003).

$$n = \frac{z^2 * \mathrm{p} * (1 - \mathrm{p}) * \mathrm{N}}{ME^2 * (\mathrm{N} - 1) + \mathrm{z}^2 * \mathrm{p} * (1 - \mathrm{p})'} \tag{3.1}$$

- n is the sample size.
- ME is the desired margin of error (for desired reliability, the acceptable maximum error is 0.05, with an associated 95% confidence interval). ME=0,05
- N is the population size: Students and employees living in the central districts of Izmir. N= 1.652.387
- p is the preliminary estimate of the proportion in the population (It was presumed that the attributes being measured are distributed normally (or nearly so) with estimated proportion.) p=0,5
- z is the two-tailed value of the standardized normal deviate associated with the desired level of confidence (for 95% confidence interval the value of z was equal to 1.96). z=1,96

$$n = \frac{(1{,}96)^2 * (0{,}5) * (1 - 0{,}5) * 1652387}{(0{,}05)^2 * (1652387 - 1) + (1{,}96)^2 * (0{,}5) * (1 - 0{,}5)} = 384{,}07 \tag{3.2}$$

Simple random sampling is a data collection method frequently used in random person-based surveys. In this study, a commonly used formula was used to determine the number of surveys in city-based studies. In this study, using simple random sampling

formula with the desired margin of error of 5% It was determined that 385 questionnaires should be made.

In cross-sectional design, even if the entire survey study takes a long time, everyone answers the survey questions once. It is generally used in large samples (Adler & Clark, 2014). This study is a cross-sectional design study. Each person answered the questionnaires only once. The survey study lasted for 1.5 months. The survey was continued from 07:00 a.m. to 10:00 p.m. in the three transfer centers. The questionnaire was applied with the researcher-administered method between 05.11.2022 - 19.12.2022. An equal number of 128 questionnaires were conducted at all three selected transfer centers. To reach the number of 385 questionnaires, one more questionnaire was made in Halkapınar. 128 questionnaires were conducted at Fahrettin Altay Transfer Center between 05.11.2022 and 18.11.2022. Between 19.11.2022 and 02.12.2022, 128 questionnaires were conducted at Konak Iskele Transfer Center. Between 03.12.2022 and 19.12.2022, 129 questionnaires were conducted at Halkapınar Transfer Center.

The questionnaires were conducted face to face at the three transfer centers. Survey questions were asked by the researcher of the thesis. 385 questionnaires were made randomly. At the beginning of the survey, it was learned that the person was a student or an employee. People who were not students or employees were eliminated. 385 questionnaires consisted of randomly selected people who were learned to be students or employees. Most of the survey questions are multiple choice questions. People answered questions for two periods, before and during the pandemic. Both categorical and non-categorical data were collected from the questionnaire. Non-categorical data were analyzed by dividing them into categories.

3.5.2. Survey Data and Analysis

In the survey study, primary data was obtained from students and employees in the city center of Izmir, the target groups of the study. The questionnaire was created under three headings: general information, travel behaviors, before pandemic period and pandemic period urban travel behaviors. Person-based data obtained from the survey research are shown in the table 3.7.

Table 3.7 Variables and categories.

Variable	Categories					
Age	6-17		18-40		41-65	
Gender	Female			Male		
Student-Employee	Student		Employee		Both Student and Employee	
Education Level	Primary School	High School		Undergraduate	Master's degree Doctorate	
Private Car Ownership	Owned			Not owned		
Public Transport Satisfaction	Satisfied			Not satisfied		
Walking distance from the home to the public transport stop	0-5min	5-10min		10-15min	15min+	
General travel time during the day	05.00-09.00	09.00-13.00	13.00-17.00	17.00-21.00	21.00-05.00	
Important Factor of Travel Preference Before Pandemic	Comfort	Cost	Health	Safety	Travel Time	
Important Factor of Travel Preference During Pandemic	Comfort	Cost	Health	Safety	Travel Time	
Before Pandemic Reason to Travel Mode Preferences	Prefer	No, Cost	No, Comfort	No, Health	No, Safety	No, Travel time
During Pandemic Reason to Travel Mode Preferences	Prefer	No, Cost	No, Comfort	No, Health	No, Safety	No, Travel time
Online Study/Work	Yes			No		
The Mode Used to Go to School/Work Before the Pandemic	Walking		Private Car		Public Transport	
The Travel Time to Go to School/Work Before the Pandemic	0-15	16-30		31-45	46+	
The Mode Used to Go to School/Work During the Pandemic	Walking		Private Car		Public Transport	
The Travel Time to Go to School/Work During the Pandemic	0-15	16-30		31-45	46+	
The Mode Used to Go to School/Work During the Pandemic	Walking		Private Car		Public Transport	
The Travel Time to Go to School/Work During the Pandemic	0-15	16-30		31-45	46+	
The Mode Used to Go to Social Activities Before the Pandemic	Walking		Private Car		Public Transport	
The Travel Time to Go to Social Activities Before the Pandemic	0-15	16-30		31-45	46+	
Number Of Travels Per Week to Go to Social Activities Before the Pandemic	[0,1,2,3]			4+		
The Mode Used to Go to Social Activities During the Pandemic	Walking		Private Car		Public Transport	
The Travel Time to Go to Social Activities During the Pandemic	0-15	16-30		31-45	46+	
Number Of Travels Per Week to Go to Social Activities During the Pandemic	[0,1,2,3]			4+		

The research questionnaire consists of three parts: demographic information, travel behavior information, urban travel preferences before and during the pandemic. The data obtained from the survey study were categorized as in table 3.7 to be used in analysis studies. The questionnaire, where the first-hand data is obtained, is in the appendix.

3.5.2.1. Demographic Information

First, we will examine the statistical distributions of demographic data. Demographic information was collected from questionnaire. These questions were asked in the questionnaire to understand the importance of external factors on travel preferences.:

- How old are you?
- Gender?
- Are you a student/employee?
- What is your education status?
- Where do you live?
- What is your income difference between before and during the pandemic period?

Age data were categorized by teen, young adult, middle adult, and advanced adulthood. Age data were analyzed in 3 categories, as there were no students or employees in the advanced adulthood category in the sample. Since no transgender individuals were found in the sample, gender data were categorized as female and male. Education level was examined in 4 categories as primary school, high school, undergraduate, and master-doctoral degree. Student and employee status data were categorized in three groups as student, employee, and both student and employee. The place of residence and income difference data were not used because they could not be obtained qualitatively. These questions were asked to measure the sub-hypothesis of the thesis is that after Covid-19 Pandemic, there have been significant changes in the travel factor of employees and students with Chi-square Test. Also, data are shown below as statistics to better understand the sample.

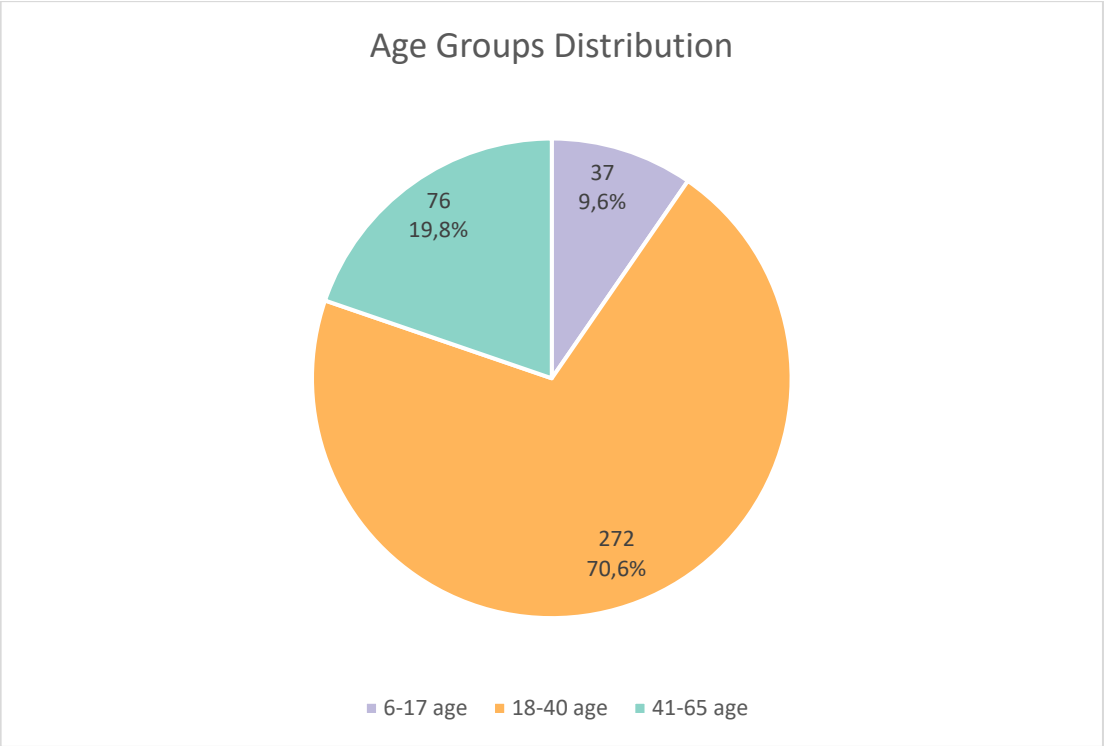

Figure 3.8 Age group distribution of the study.

It is seen that most of the sample is between the ages of 18-40 from figure 3.8. We can say that this age group is more active in urban transportation. As you can see from the descriptive statistics the mean of age is 29,6. The youngest person of the sample is 10 years old, and the oldest person of the sample is 64 years old. The standard deviation of the data is not much. The significance value of the normality test is below 0,05, so the data is normally distributed.

Table 3.8 Descriptive statistics of age data.

Age Group Statistics	
Mean	29,6
Median	26
Min	10
Max	64
Std. Deviation	11,7

Table 3.9 Normality Test of age data.

Tests of Normality						
	Kolmogorov-Smirnov[a]			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
Age	,151	385	,000	,934	385	,000
a. Lilliefors Significance Correction						

The gender distribution of this population is shown in the figure 3.9. We can say that the gender is almost evenly distributed.

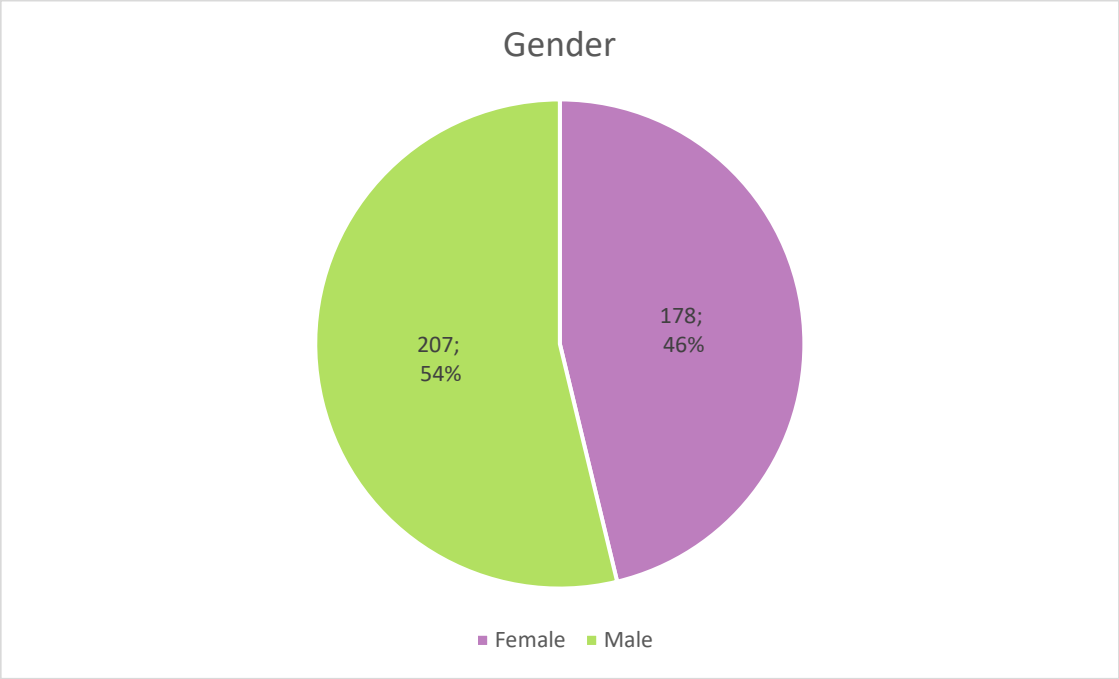

Figure 3.9 Gender distribution of the study.

Based on the data obtained from the questionnaires, the target groups were examined in three groups as employee, student, and both student and employee as seen in figure 3.10. The result is that those employees are more active in urban transportation than students in İzmir.

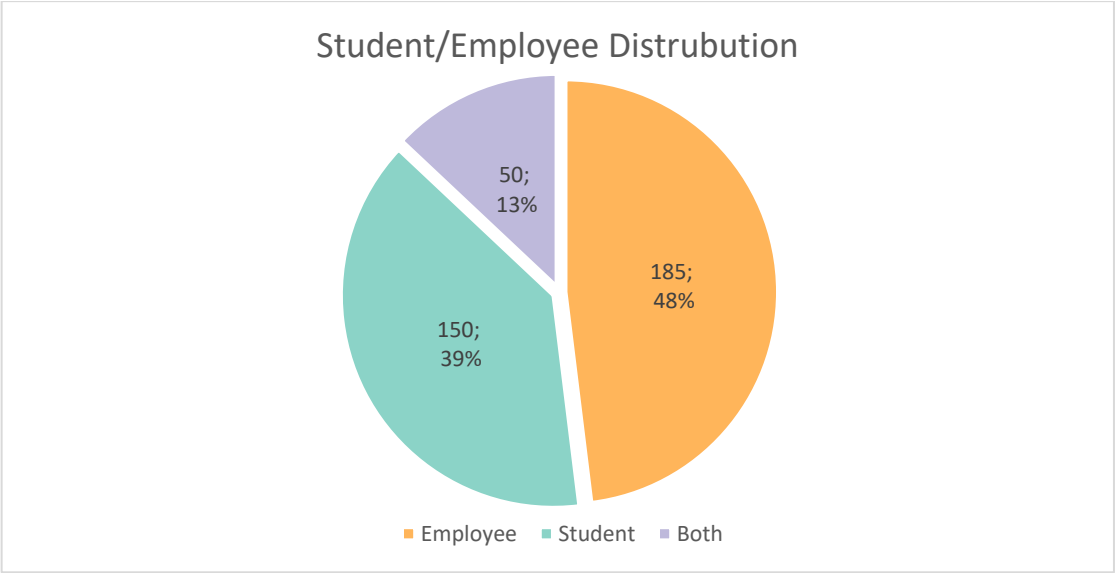

Figure 3.10 Distribution of student/employee numbers.

We will examine the educational status of the people in our sample in the following two column graphs over employees and students. The education level of the working group in the study sample is concentrated in high school and undergraduate degrees. Considering that the survey was conducted by random selection method, we can say that employees with high school and undergraduate education participate more actively in urban transportation.

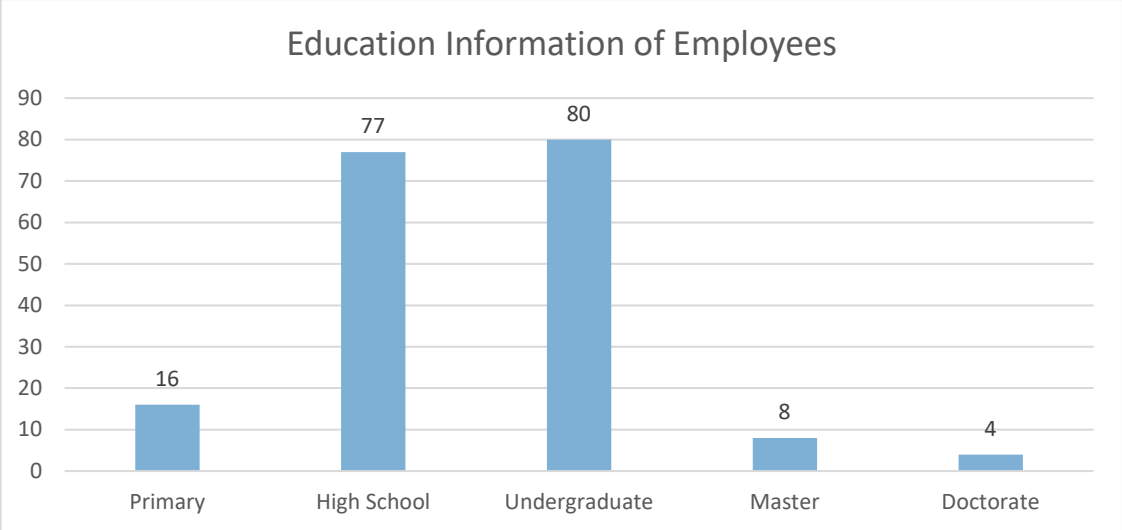

Figure 3.11 Education level of the employee group.

If we look at the distribution of the school level of the students in the figure 3.12, we see that the survey was mostly conducted with university students. The result is that, in general, university students are more active in urban transportation.

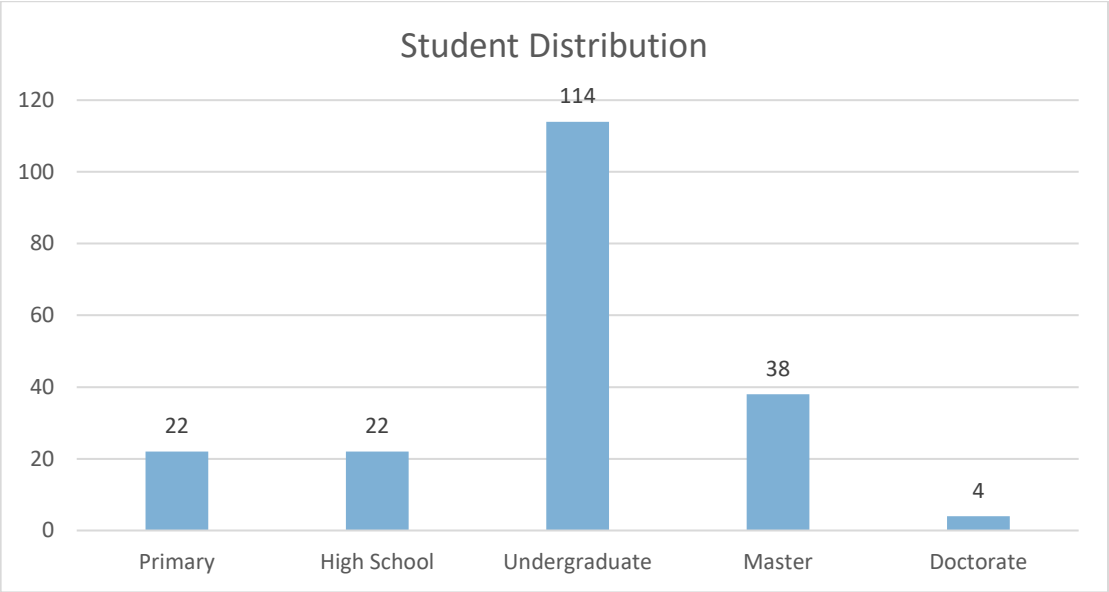

Figure 3.12 Distribution of students.

3.5.2.2. Travel Behavior

In this section, we will examine the statistical distributions of travel behavior data. In this part, these questions were asked:

- Are you satisfied with the current public transport system?
- Do you have a private vehicle?
- Do you have a license?
- How many minutes' walk from the public transport stop do you live?
- Which time period do you usually travel?

Private car, bicycle, scooter, motorcycle, and other vehicles were asked as vehicle ownership, but only private car ownership was used as an external factor in the analyses. This is due to the lack of ownership in other vehicle types. The distance between home and the stop was categorized as 0-5min, 5-10min, 10-15min, and 15min+ according to

walking speed. The general travel time period was categorized according to the prime times of the employees and students.

These questions also were asked to measure the sub-hypothesis of the thesis is that during the Covid-19 Pandemic, there have been significant changes in the travel factor of employees and students with Chi-square Test. Of these data, only private car ownership was used in factor analysis, other data are shown below as statistics to better understand the sample.

Passenger satisfaction of existing transportation systems is a factor that affects passengers' travel preferences. Considering the satisfaction rate of the public transportation systems in the city of Izmir, we can say that the majority are satisfied (figure 3.13).

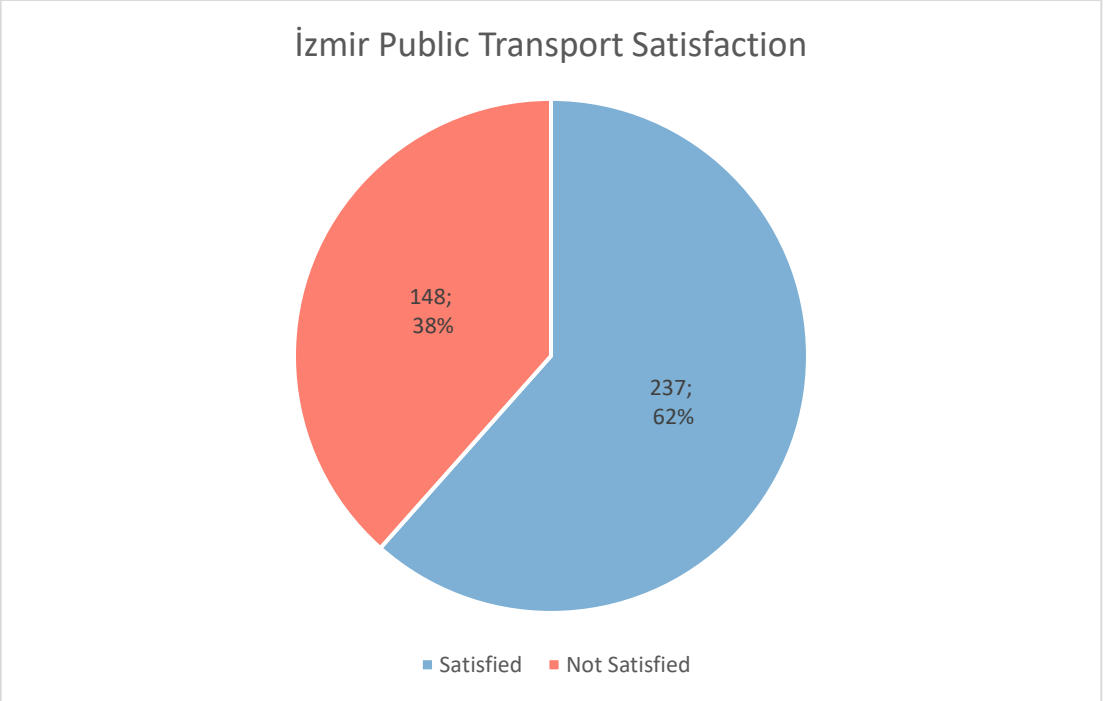

Figure 3.13 Izmir public transport satisfaction.

Driving license and private car ownership are factors that affect the use of private car in passengers' travel preferences. According to the results of the survey, driving license is 63%; private car ownership 43%; bike ownership is 13% (figure 3.14).

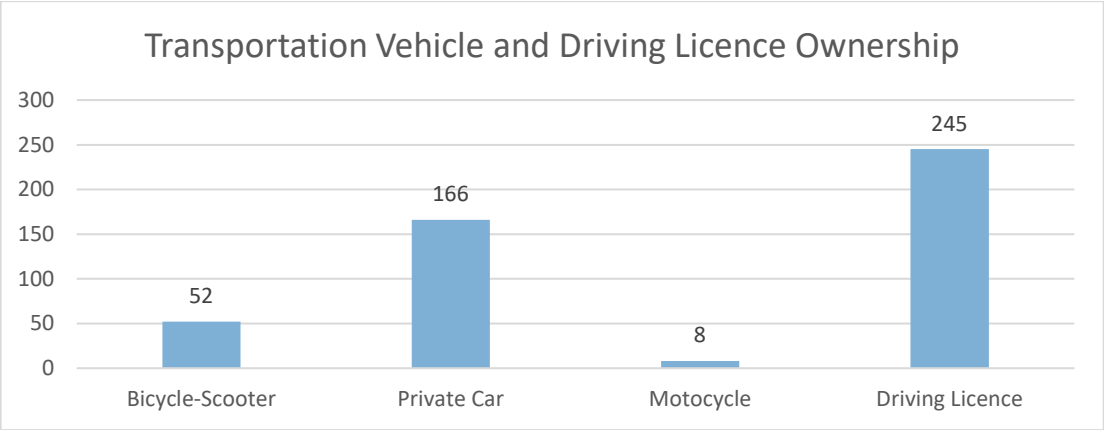

Figure 3.14 Driving license and transportation vehicle ownership.

The distance between home and public transportation stops is a factor that affects passengers' preference for public transportation. In our study, access was evaluated in minutes based on walking speed (5km/h) as a distance criterion.

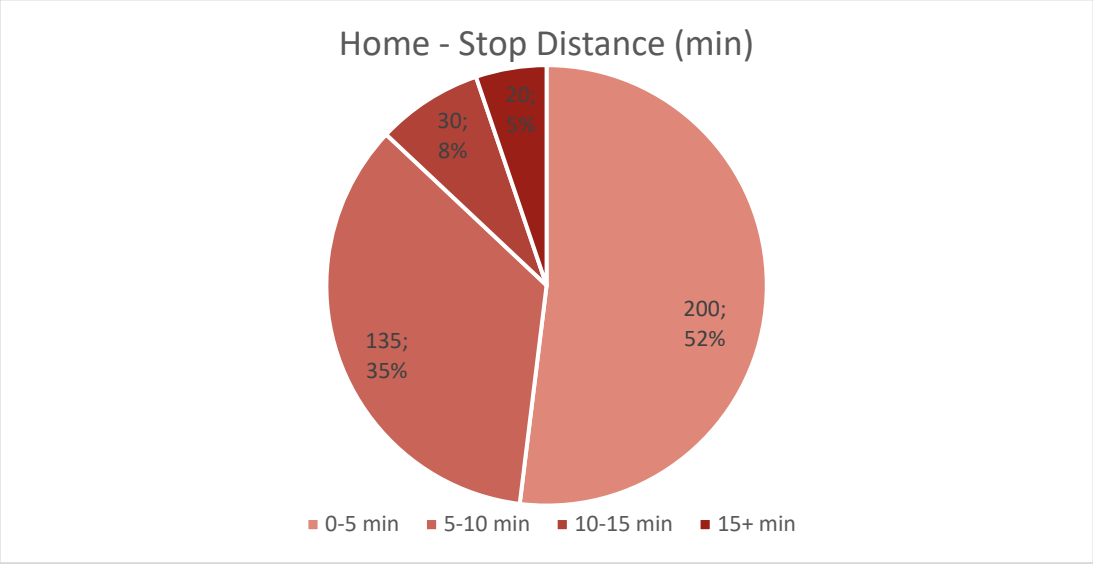

Figure 3.15 Distance from home to public transport stop (min).

Working from home or working at work is also a factor that can affect the changes in travel preferences and the reasons for change during the pandemic period, as it affects passengers' travel behaviors. In the study, it is seen that 34% of people work from home during the pandemic period, while the remaining majority continue to work at workplace.

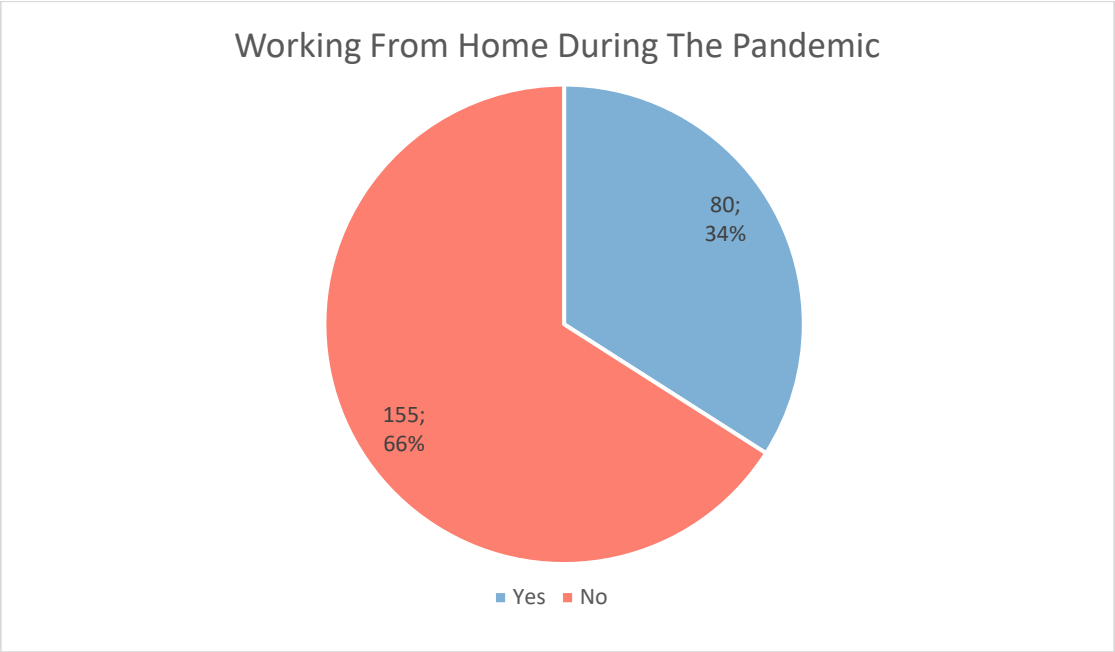

Figure 3.16 Working from home situation during the pandemic.

The traffic density is generally during the business and school round-trip hours. All passengers chose 1 or 2 time periods. This also plays a big role in the travel period of people. In the figure 3.17, it is seen that passengers' travel periods are concentrated in the work and school travel hours. We can say that work and school hours determine the peak time in urban mobility.

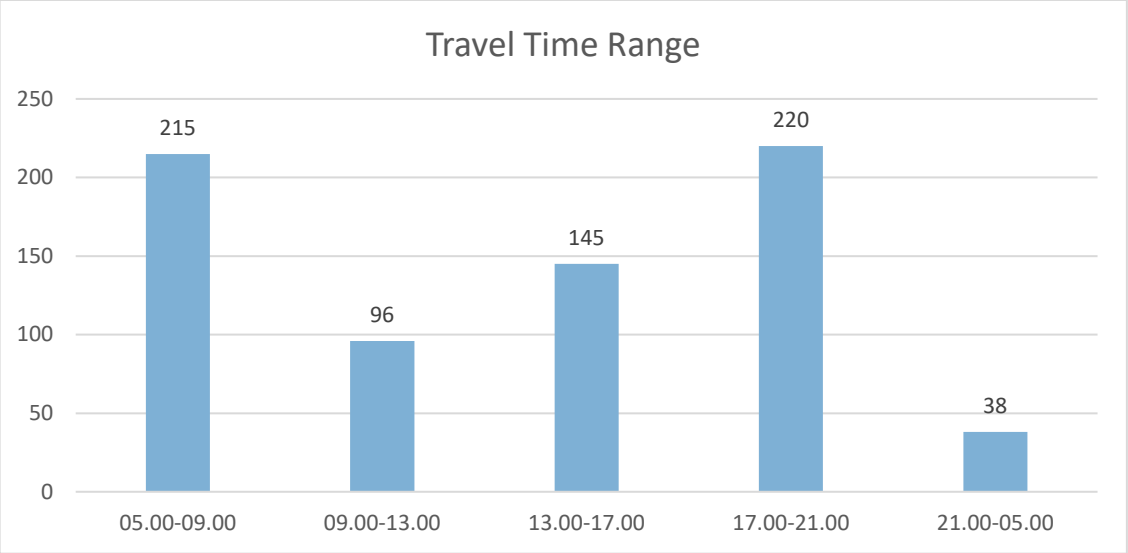

Figure 3.17 Travel time range.

3.5.2.3. Urban Travel Preferences Before and During the Pandemic

In the urban travel preferences before and during the pandemic heading of the questionnaire, these questions were asked for before and during the pandemic:

- What was the most important factor in your travel mode preferences (walking, private car, public transportation) before the pandemic?
- What was the most important factor in your travel mode preferences (walking, private car, public transportation) during the pandemic?
- How much has the pandemic affected your daily life?
- Have you worked from home during the pandemic?
- How long were your school/work travels before the pandemic? Which travel mode did you prefer?
- How long were your school/work travels during the pandemic? Which travel mode did you prefer?
- How long were your social travels before the pandemic? How many travels did you make per week? Which travel mode did you prefer?
- How long were your social travels during the pandemic? How many travels did you make per week? Which travel mode did you prefer?
- Before the pandemic, was the travel mode you used your preferred travel mode? If not, what was your reason for using that travel mode?
- During the pandemic, was the travel mode you used your preferred travel mode? If not, what was your reason for using that mod?

Travel mode preferences were analyzed in three categories as walking, private car and public transportation. Modes of bicycles, scooters, motorcycles, service, and taxi were also included in the options. But only enough answers were received. Travel times were analyzed in four categories as 0-15min, 16-30min, 31-45min, 46min+. These questions will be used as main data in the analysis of travel mode preferences, travel times and travel factors. All these questions help to understand the travel preferences and behaviors of the students and employees in the sample.

These questions were asked to measure both main hypothesis and sub-hypothesis of the thesis. These questions are the main questions of the study asking about travel preferences. In the answers given, the first main hypothesis, "the Covid-19 Pandemic has

significantly affected travel preferences of students and employees", was measured by comparing the before and during the pandemic period with McNemar-Bowker Test. Then, sub-hypothesis of the thesis is that after Covid-19 Pandemic, “there have been significant changes in the travel factor of employees and students”, was answered by measuring the impact of the factors affecting travel preferences before and during the pandemic by interpreting the answers to the questions of external factors with Chi-square Test.

3.6.Research And Statistical Analysis Methods

In the study, the working population and students were determined as the target groups. The study covering before and during the Covid-19 Pandemic Period in İzmir province. After the data collection study, three main methods were used for the analysis of these data.

Table 3.10 Research questions and methods.

	Research Question	**Method**
1	Was the change created by the Covid 19 Pandemic in travel mode preferences significant?	McNemar-Bowker Test
2	Which factors has significant effect on travel mode preferences before and during the pandemic?	Chi-square test
3	How strong were the effects of these factors?	Phi, and Cramer’s V

3.6.1. McNemar-Bowker Test

McNemar-Bowker Test, also known as Paired Chi-Square, is a nonparametric method. This method examines the difference between measurements of the same groups at two different times and the significance of the difference between measurements of two groups. For the method to work properly, the data must be divided into categories (Kavzoglu, 2017). This method is often used in before-after comparison analysis. In this study, McNemar-Bowker Test measures the travel preferences of the groups within the scope of the study and significance of the changes before and during the Covid-19

Pandemic. The formula on which the McNemar-Bowker Test is based on the Chi-square formula is examined below (Kavzoglu, 2017).

$$x = \sqrt{\frac{\left(\left| n_{ij} + n_{ji} \right| - 1\right)^2}{n_{ij} + n_{ji}}} \tag{3.3}$$

nij indicates the number of pixels misclassified by method i but classified correctly by method j, and nji indicates the number of pixels misclassified by method j but not by method I (Kavzoglu, 2017). More specifically, the test is the ratio of the square of the difference in discordant frequencies to the total discordant frequencies (Bellack, & Hersen, 1998). The x value of the total McNemar-Bowker Test is obtained by summing the x for each dual difference (Hoffman, 2015). The result table of McNemar-Bowker Test in Spss is given below.

Table 3.11 Example of Chi-Square McNemar-Bowker Test result table in SPSS.

McNemar-Bowker Tests			
	Value	df	Asymp. Sig. (2-sided)
McNemar-Bowker Test	31,124	2	,000
N of Valid Cases	385		

For the difference to be significant at the 95% confidence interval, the significance in the table must be less than 0.05 and the McNemar-Bowker Test Value must be greater than 3.84 (Kavzoglu, 2017).

3.6.2. Chi Square Test

Chi Square Analysis is a widely used method that evaluates significance of the effect or correlation between two variables (Franke, & Christie, 2012). In this study, Chi-square Test examined significance of factors on travel preferences before and during the Covid-19 Pandemic. IBM SPSS program is used in this analysis.

McHugh (2013) states that the Chi Square Test not only provides information about the significance of the difference or effect between the variables, but also explains the exact category from which this difference and effect originates. Also, it is a non-parametric test. To use Chi Square, the properties of the data must be as follows:

- Data should be nominal values, not percentages.
- A category must exist at only one level of a data.
- Each subject must be in only one cell.
- Groups should be independent of each other.

Chi square test is generally applied with the help of tools in statistical package programs such as SPSS. It can also be calculated manually. Either way, the Chi square test is based on a formula (McHugh, 2013).

$$x^2 = \sum_{k=1}^{n} \frac{(O_k - E_k)^2}{E_k} \tag{3.4}$$

x^2= Chi-square value of the cell

O_k= The observed frequency of a cell

E_k=The expected frequency of the respective cell

n= Sample size

k= Constant

As an example of using chi square method, Roche-Cerasi et al's (2013) examines how the importance of travel preference factors changes in Oslo, Norway. In this study, the relationship between travel mode preferences and usage, and the relationship between variables such as gender, age, education level and driver's license were examined with the Chi square Pearson correlation coefficient. As a result, it was found that age groups, driving license and education level variables whose Chi Square Pearson values exceeded 5 and whose significance values were less than .05 had a significant effect on the travel mode preferences, while the gender variable did not have a significant effect.

Table 3.12 Example of Chi Square Test result table from SPSS.

Chi-Square Tests			
	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-Square	17,944[a]	4	,001
Likelihood Ratio	18,389	4	,001
N of Valid Cases	385		
a. 0 cells (0,0%) have expected count less than 5. The minimum expected count is 8,32.			

For the chi square test to be interpretable, the cells value at the bottom of the table must be below 20%. Also, the minimum expected count value at the bottom of the table should be above 5. If these conditions are not met, variable sets should be recreated. The value at the intersection of the Pearson Chi-Square row and the Asymptotic Significance (2-sided) column is the p value. If this value is below 0.05, the variables are dependent and the correlation between them is significant, if it is above 0.05, there is no significant correlation between the variables. Pearson Chi-Square value is the Chi square score value.

3.6.3. Phi and Cramer's V

Phi and Cramer's V method is used after Chi Square Test. Chi square test examines significance of the correlation between variables, but it does not measure the strength of the correlation. Phi and Cramer's V method measures the strength of the correlation between variables. In this study, Phi and Cramer's V method measures the strength of the factors. If Phi and Cramer's V value is between 0-0.2, there is a weak relationship, between 0.2-0.3 there is a moderate relationship, and above 0.3 there is a strong relationship.

Table 3.13 Example of Phi and Cramer's V result table from SPSS.

Symmetric Measures			
		Value	**Approximate Significance**
Nominal by Nominal	Phi	,216	,001
	Cramer's V	,216	,001
N of Valid Cases		385	

CHAPTER 4

COVID-19 PANDEMIC EFFECT ON TRAVEL PREFERENCES

In this section, significance of the changes in travel preferences before and during the Covid-19 Pandemic are evaluated. The preferences examined within the scope of the changes in travel preferences due to the Covid-19 Pandemic effects are as follows:

- Travel Mode Preferences for School and Work Travels
- Travel Time for School and Work Travels
- Travel Mode Preferences for Social Travels
- Travel Time for Social Travels
- Number of Weekly Social Travels

Changes in these preferences were examined in three stages: "student travels", "employee travels", "student and employee travels". To determine significance of the Covid-19 Pandemic effects on travel preferences, the McNemar-Bowker Test method based on the Chi-square Test formula was applied on the SPSS program. In addition, the changes in travel preferences were also examined with the help of tables and graphs.

Although the surveys asked about service, taxi, bicycle, and scooter options, very few people preferred them. To achieve more meaningful results, these modes of travel were ignored when evaluating the mode selection results and travel time results. Bicycle-Scooter combined with walk and taxi and service combined with public transportation.

4.1.Pandemic Effect on Travel Behavior

The pandemic effect on people's daily life is also a factor that affects their travel mode preferences and travel frequency. The pandemic has created several changes in travel preferences. To investigate the reasons for this, I tried to reveal the change in the reasons for choosing the mode of travel in the study by asking people about the reasons for choosing the mode of travel before and during the pandemic. The results can be seen in figure 4.1. Before the pandemic, most of them willingly preferred the mode of travel they used, while a large group stated that they were forced to use it because of the cost.

There is a decrease in the number of people who willingly prefer the mode of travel they use during the pandemic period. On the other hand, there has been an increase in the number of people forced to use it due to cost and health reasons.

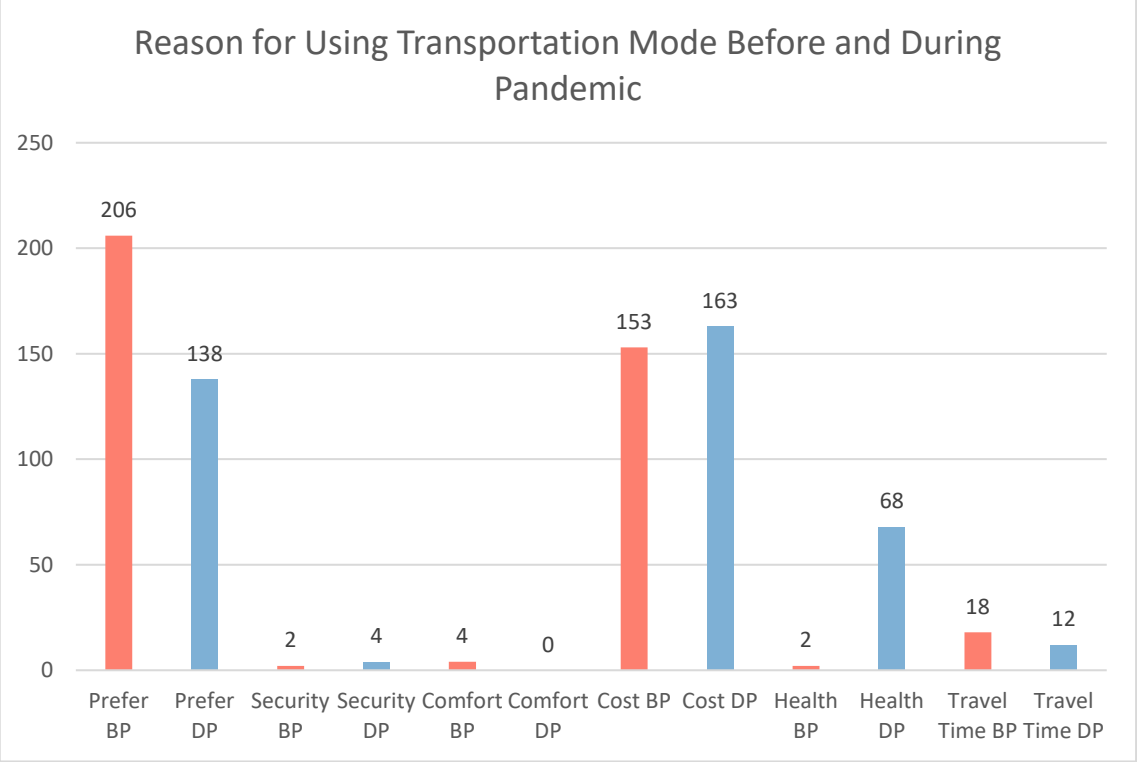

Figure 4.1 Reasons for choosing the mode of travel before and during the pandemic.

4.2.Changes on Travel Mode Preferences for School and Work Travels

Considering that school and work travels are made every weekday, we can say that these travels constitute most of the urban mobility. In the graphics below, we can see which travel modes are preferred in daily urban mobility, and the change between before and during the pandemic period. When we take an overview of the graphics, we see that the most preferred mode of travel for work and school travels is public transportation.

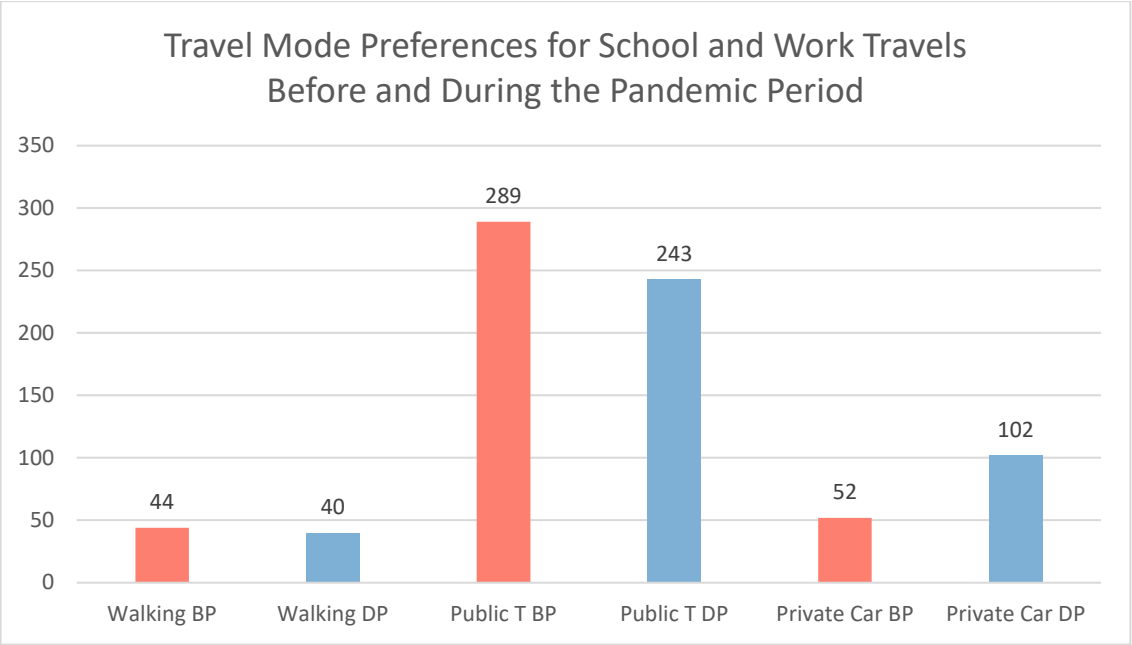

Figure 4.2 Number of the mode of travel used in school and work travels before and during the pandemic.

If we look at the Covid-19 Pandemic effect on school and work travel preference, we can see that there is a slight decrease in the preference for walking, a high decrease in the preference for public transportation, and the preference for private car has doubled.

Table 4.1 Crosstab of McNemar-Bowker Test of before and during analysis of school and work travel preferences.

BP_com_mod * DP_com_mod Crosstab						
			DP_com_mod			**Total**
			Priv_car	Pub_t	Walk	
BP_com_mod	Priv_car	Count	48	4	0	52
		% of Total	12,5%	1,0%	0,0%	13,5%
	Pub_t	Count	54	227	8	289
		% of Total	14,0%	59,0%	2,1%	75,1%
	Walk	Count	0	12	32	44
		% of Total	0,0%	3,1%	8,3%	11,4%
Total		Count	102	243	40	385
		% of Total	26,5%	63,1%	10,4%	100%

When we examine crosstab, we see which travel mode preferences have changed from before the pandemic to the during the pandemic period. The important change that took place here is that 54 people changed their preferences from public transportation to private car. To understand significance of these changes, we can examine the McNemar-Bowker Test results.

Table 4.2 McNemar-Bowker Test of before and during analysis of school and work travel preferences.

McNemar-Bowker Test			
	Value	df	Asymp. Sig. (2-sided)
McNemar-Bowker Test	43,903	2	,000
N of Valid Cases	385		

Since the p value is less than 0.05 in the McNemar-Bowker Test table, there is a significant difference between before and during the pandemic period.

4.2.1. Changes on Travel Mode Preferences for School Travels

In the previous analysis, we examined school and work travel preferences. In this analysis, we will examine only school travel preferences. When we look at the figure 4.3, we see that there are similar changes with the first analysis. There is a small increase in the preference of walking, a decrease in the preference of public transportation, and an increase in the preference of private car.

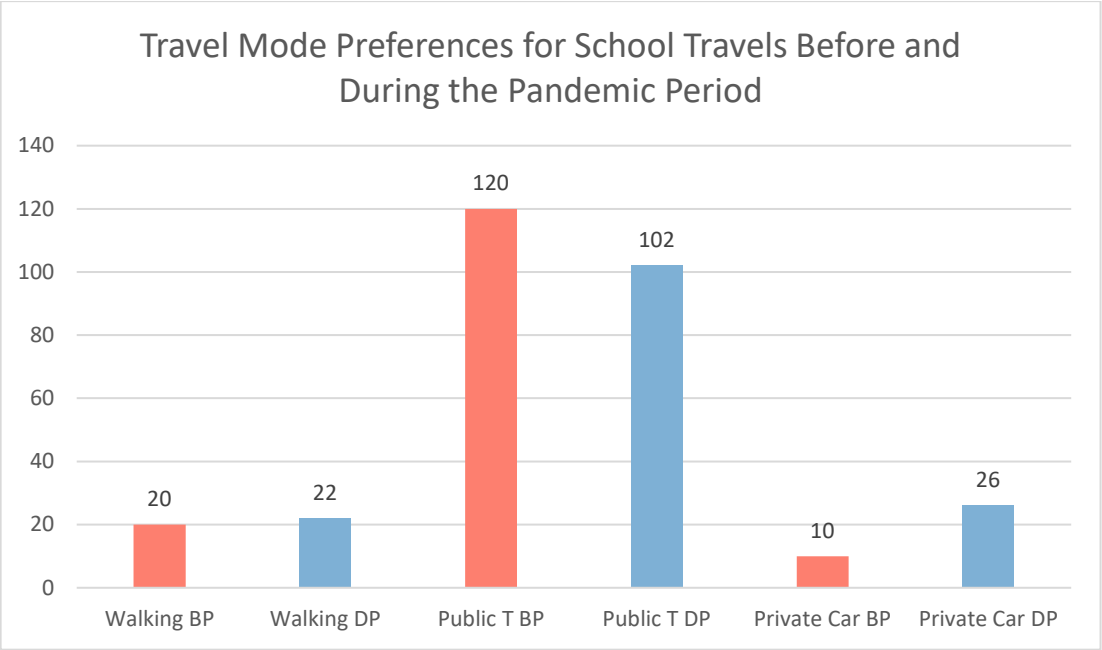

Figure 4.3 Number of the mode of travel used in school travels before and during the pandemic.

Table 4.3 Crosstab of McNemar-Bowker Test of before and during analysis of school travel preferences.

BP_stu_com_mod * DP_stu_com_mod Crosstab						
			DP_stu_com_mod			Total
			Priv_car	Pub_t	Walk	
BP_stu_com_mod	Priv_car	Count	10	0	0	10
		% of Total	2,6%	0,0%	0,0%	2,6%
	Pub_t	Count	16	98	6	120
		% of Total	4,2%	25,5%	1,6%	31,2%
	Walk	Count	0	4	16	20
		% of Total	0,0%	1,0%	4,2%	5,2%
Total		Count	26	102	22	150
		% of Total	6,8%	26,5%	5,7%	100%

When we examine crosstab, we see which travel mode preferences have changed from before the pandemic to the during the pandemic period. The important change that took place here is that 16 people changed their preferences from public transportation to private car. To understand significance of these changes, we can examine the McNemar-Bowker Test results.

Table 4.4 McNemar-Bowker Test of before and during analysis of school travel preferences.

McNemar-Bowker Test			
	Value	df	Asymp. Sig. (2-sided)
McNemar-Bowker Test	16,400	2	,000
N of Valid Cases	385		

Since the p value is less than 0.05 in the McNemar-Bowker Test table, there is a significant difference between before and during the pandemic period.

4.2.2. Changes on Travel Mode Preferences for Work Travels

In this analysis, we will examine only work travel preferences. When we look at the figure 4.4, we see that there are similar changes with the first and second analysis. There is a small decrease in the preference of walking, a decrease in the preference of public transportation, and an increase in the preference of private car.

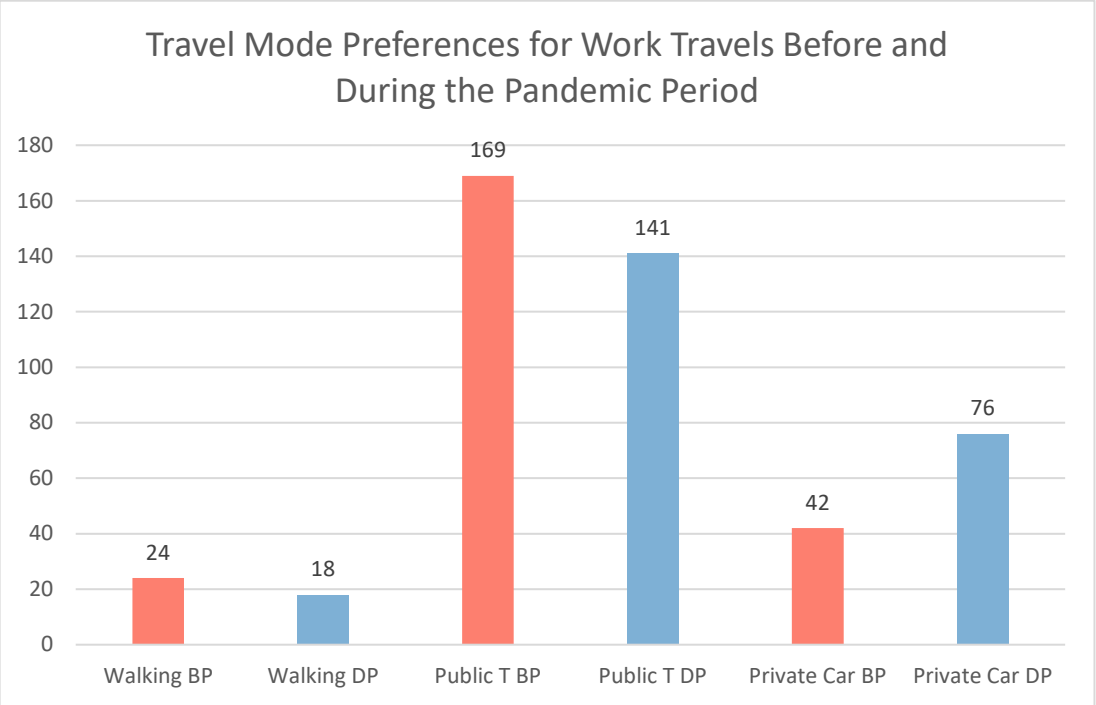

Figure 4.4 The mode of travel used in work travels before and during the pandemic.

Table 4.5 Crosstab of McNemar-Bowker Test of before and during analysis of work travel preferences.

BP_stu_com_mod * DP_stu_com_mod Crosstab						
			DP_emp_com_mod			Total
			Priv_car	Pub_t	Walk	
BP_emp_com_mod	Priv_car	Count	38	4	0	42
		% of Total	9,9%	1,0%	0,0%	10,9%
	Pub_t	Count	38	129	2	169
		% of Total	9,9%	33,5%	0,5%	43,9%
	Walk	Count	0	8	16	24
		% of Total	0,0%	2,1%	4,2%	6,2%
Total		Count	76	141	18	235
		% of Total	19,7%	36,6%	4,7%	100%

When we examine crosstab, we see which travel mode preferences have changed from before the pandemic to the during the pandemic period. The important change that took place here is that 38 people changed their preferences from public transportation to private car. To understand significance of these changes, we can examine the McNemar-Bowker Test results.

Table 4.6 McNemar-Bowker Test of before and during analysis of work travel preferences.

McNemar-Bowker Test			
	Value	df	Asymp. Sig. (2-sided)
McNemar-Bowker Test	31,124	2	,000
N of Valid Cases	385		

Since the p value is less than 0.05 in the Chi-square McNemar-Bowker Test table, there is a significant difference in work travel mode preferences between before and during the pandemic period.

4.3.Changes on Travel Time for School and Work Travels

In this section, the change in school and work travel times before and during the pandemic is examined. When the differences of school and work travel times between before and during the pandemic period were observed, a decrease of 1.21 minutes was

observed in the total average. While an increase of 0.47 minutes was observed in school travels, there was an average decrease of 2.28 minutes in work travels.

Table 4.7 School and work travel time average before and during the pandemic.

Changes on Travel Time for School and Work Travels		
	Before the Pandemic	**During the Pandemic**
Total Mean	40,60052219	39,38481675
Student	40,3	40,77181208
Employee	40,61965812	38,33333333

Table 4.8 Crosstab of McNemar-Bowker Test of before and during analysis of school and work travel time.

BP_com_time_clus * DP_com_time_clus Crosstab							
			DP_com_time_clus				Total
			0-15	16-30	31-45	46+	
BP_com_time_clus	0-15	Count	46	7	4	1	58
		% of Total	12,0%	1,8%	1,0%	0,3%	15,1%
	16-30	Count	9	104	14	6	133
		% of Total	2,3%	27,2%	3,7%	1,6%	34,7%
	31-45	Count	1	14	52	7	74
		% of Total	0,3%	3,7%	13,6%	1,8%	19,3%
	46+	Count	1	15	10	92	118
		% of Total	0,3%	3,9%	2,6%	24,0%	30,8%
Total		Count	57	140	80	106	383
		% of Total	14,9%	36,6%	20,9%	27,7%	100%

When we examine the crosstab, we see how the travel times changed from before the pandemic to during the pandemic period. As a change, we see that, 15 people from 46+min to 16-30min, 10 people from 46+min to 31-45min have reduced their travel time. We can examine the McNemar-Bowker Test results to see if these changes are significant or insignificant in table 4.9.

Table 4.9 McNemar-Bowker Test of before and during analysis of school and work travel time.

McNemar-Bowker Test			
	Value	df	Asymp. Sig. (2-sided)
McNemar-Bowker Test	6,437	6	,376
N of Valid Cases	383		

Since the p value is greater than 0.05 in the McNemar-Bowker Test table, there is no significant difference between before the pandemic and during the pandemic period in school/work travel time.

4.3.1. Changes on Travel Time for School Travels

In this section, the change in school travel times before and during the pandemic is examined. When we examine the crosstab, we see how the travel times changed from before the pandemic to during the pandemic period. In general, not much change is observed. 10 people who increased their travel time from 16-30min to 31-45min transition from before the pandemic period and during the pandemic period can be seen as an interesting result.

Table 4.10 Crosstab of McNemar-Bowker Test of before and during analysis of school travel time.

BP_com_stu_time * DP_com_stu_time Crosstab							
			DP_com_stu_time				Total
			0-15	16-30	31-45	46+	
BP_com_stu_time	0-15	Count	20	2	2	0	24
		% of Total	13,3%	1,3%	1,3%	0,0%	16,0%
	16-30	Count	0	44	10	3	57
		% of Total	0,0%	29,3%	6,7%	2,0%	38,0%
	31-45	Count	1	4	16	5	26
		% of Total	0,7%	2,7%	10,7%	3,3%	17,3%
	46+	Count	0	3	3	37	43
		% of Total	0,0%	2,0%	2,0%	24,7%	28,7%
Total		Count	21	53	31	45	150
		% of Total	14,0%	35,3%	20,7%	30,0%	100%

Table 4.11 McNemar-Bowker Test of before and during analysis of school travel time.

McNemar-Bowker Test			
	Value	df	Asymp. Sig. (2-sided)
McNemar-Bowker Test	5,405	5	,369
N of Valid Cases	150		

Since the p value is greater than 0.05 in the McNemar-Bowker Test table, there is no significant difference between before the pandemic and during the pandemic period in school travel time.

4.3.2. Changes on Travel Time for Work Travels

In this section, the change in work travel times before and during the pandemic is examined. When we examine the crosstab, we see how the travel times changed from before the pandemic to during the pandemic period. From before the pandemic period to pandemic period, 9 people reducing travel time from 16-30min to 0-15min, 10 people reducing travel time from 31-45min to 16-30, from 46+min to 16-30min 12 people reducing travel time is observed. In general, there is a slight decrease in travel time.

Table 4.12 Crosstab of McNemar-Bowker Test of before and during analysis of work travel time.

BP_com_emp_time * DP_com_emp_time Crosstab							
			DP_com_emp_time				Total
			0-15	16-30	31-45	46+	
BP_com_emp_time	0-15	Count	27	5	2	1	35
		% of Total	11,5%	2,1%	0,9%	0,4%	14,9%
	16-30	Count	9	60	4	3	76
		% of Total	3,8%	25,5%	1,7%	1,3%	32,3%
	31-45	Count	1	10	36	2	49
		% of Total	0,4%	4,3%	15,3%	0,9%	20,9%
	46+	Count	1	12	7	55	75
		% of Total	0,4%	5,1%	3,0%	23,4%	31,9%
Total	Count		38	87	49	61	235
	% of Total		16,2%	37,0%	20,9%	26,0%	100%

Table 4.13 McNemar-Bowker Test of before and during analysis of work travel time.

McNemar-Bowker Test			
	Value	df	Asymp. Sig. (2-sided)
McNemar-Bowker Test	12,225	6	,057
N of Valid Cases	235		

Since the p value is greater than 0.05 in the Chi-square McNemar-Bowker Test table, there is no significant difference between before the pandemic and during the pandemic period in work travel time.

4.4. Changes on Travel Mode Preferences for Students' and Employees' Social Travel Mode Preferences

Since social travels are not compulsory travels such as work and school travels, it is expected that travel preference of social travels will be more affected by the Covid-19 Pandemic than work and school travels. In the figure 4.5, we can see which travel modes are preferred in daily urban mobility, and the change between before and during the pandemic period.

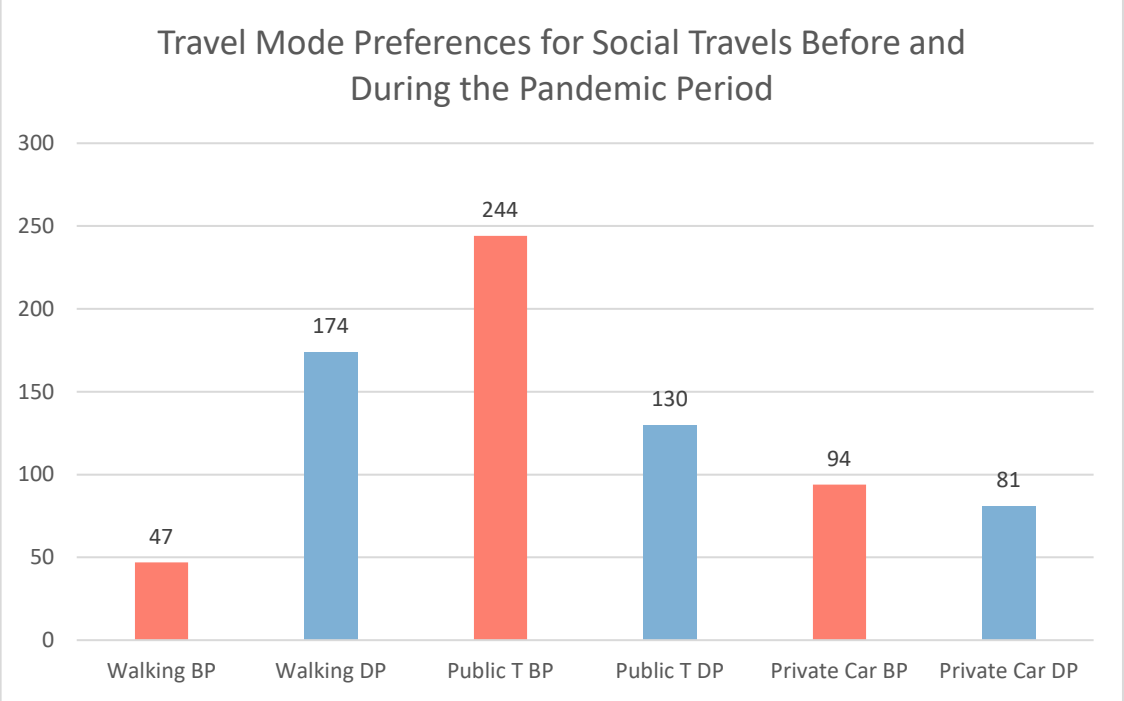

Figure 4.5 The mode of transport used in social travels before and during the pandemic.

When we look at before the pandemic period, it is seen that the use of public transportation and private car are generally high in social travels, but the use of public transportation is ahead by a large margin. When the pandemic period was started, the favorite mode of travel for social travel was changed to walking. Public transport usage has halved. There was a slight decrease in the use of private car.

Table 4.14 Crosstab of McNemar-Bowker Test of before and during analysis of students' and employees' social travel mode preferences.

BP_soc_mod * DP_soc_mod Crosstab						
			DP_soc_mod			Total
			Priv_car	Pub_t	Walk	
BP_soc_mod	Priv_car	Count	48	2	44	94
		% of Total	12,5%	0,5%	11,4%	24,4%
	Pub_t	Count	30	128	86	244
		% of Total	7,8%	33,2%	22,3%	63,4%
	Walk	Count	3	0	44	47
		% of Total	0,8%	0,0%	11,4%	12,2%
Total		Count	81	130	174	385
		% of Total	21,0%	33,8%	45,2%	100,0%

When we examine crosstab, we see which travel mode preferences have changed from before the pandemic to the during the pandemic period. There are some important changes are seen in crosstab: Firstly, 44 people changed their preferences from private car to walking. Secondly, 30 people changed their preferences from public transportation to private car. Thirdly, 86 people changed their preferences from public transportation to walking. To understand significance of these changes, we can examine the McNemar-Bowker Test results in table 4.15.

Table 4.15 McNemar-Bowker Test of before and during analysis of students' and employees' social travel mode preferences.

McNemar-Bowker Test			
	Value	df	Asymp. Sig. (2-sided)
McNemar-Bowker Test	146,266	3	,000
N of Valid Cases	385		

Since the p value is less than 0.05 in the McNemar-Bowker Test table, there is a significant difference between before the pandemic and during the pandemic period in social travel mode preferences.

4.4.1. Changes on Travel Mode Preferences for Students' Social Travel Mode Preferences

In this section, the change in students' social travel mode preferences before and during the pandemic is examined. In the figure 4.6, we can see which travel modes are preferred in daily urban mobility, and the change between before and during the pandemic period.

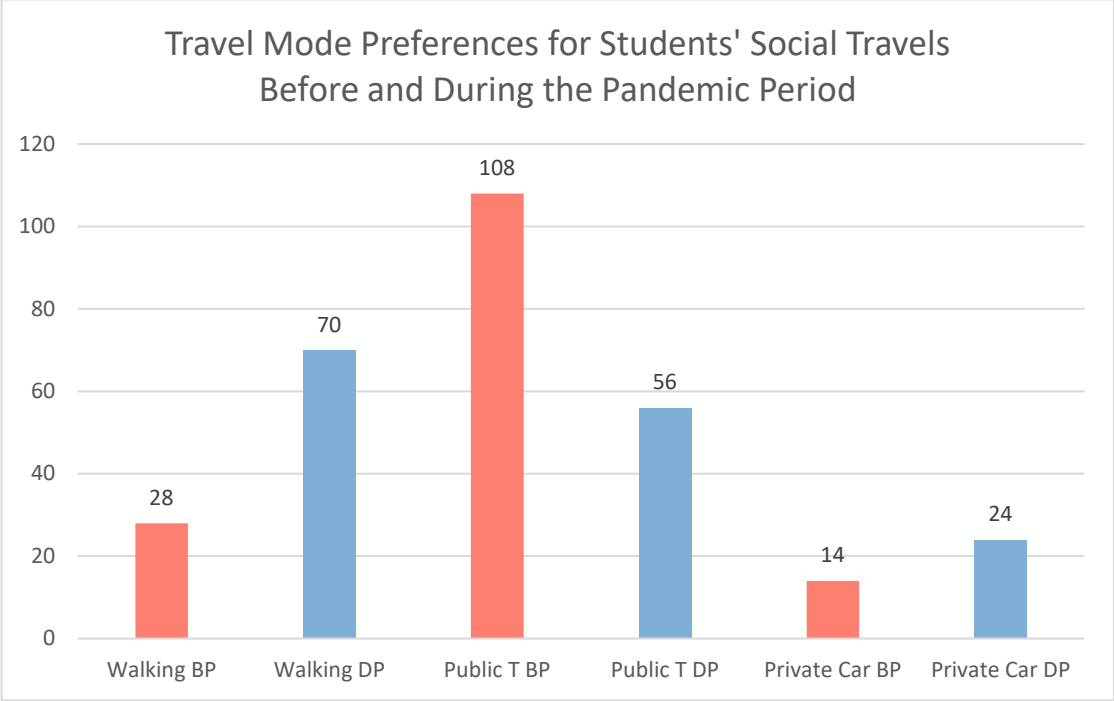

Figure 4.6 The mode of transport used in student's social travels before and during the pandemic.

When we look at before the pandemic period, it is seen that the use of public transportation is generally high in students' social travels. When the pandemic period was started, the favorite mode of travel for students' social travel was changed to walking. Public transport usage has halved. Also, there is a slight increase in the use of private car.

Table 4.16 Crosstab of McNemar-Bowker Test of before and during analysis of students' social travel mode preferences.

BP_stu_soc_mod * DP_stu_soc_mod Crosstab							
			DP_stu_soc_mod				Total
				Priv_car	Pub_t	Walk	
BP_stu_soc_mod		Count	235	0	0	0	235
		% of Total	61,0%	0,0%	0,0%	0,0%	61,0%
	Priv_car	Count	0	5	0	9	14
		% of Total	0,0%	1,3%	0,0%	2,3%	3,6%
	Pub_t	Count	0	18	56	34	108
		% of Total	0,0%	4,7%	14,5%	8,8%	28,1%
	Walk	Count	0	1	0	27	28
		% of Total	0,0%	0,3%	0,0%	7,0%	7,3%
Total		Count	235	24	56	70	385
		% of Total	61,0%	6,2%	14,5%	18,2%	100%

When we examine crosstab, we see which travel mode preferences have changed from before the pandemic to during the pandemic period. There are some important changes are seen in crosstab: Firstly, 18 people changed their preferences from public transportation to private car. Secondly, 34 people changed their preferences from public transportation to walking. To understand significance of these changes, we can examine the McNemar-Bowker Test results in table 4.17.

Table 4.17 McNemar-Bowker Test of before and during analysis of students' social travel mode preferences.

McNemar-Bowker Test			
	Value	df	Asymp. Sig. (2-sided)
McNemar-Bowker Test	58,400	3	,000
N of Valid Cases	385		

Since the p value is less than 0.05 in the Chi-square McNemar-Bowker Test table, there is a significant difference between before and during the pandemic period in students' social travel mode preferences.

4.4.2. Changes on Travel Mode Preferences for Employees' Social Travel Mode Preferences

In this section, the change in employees' social travel mode preferences before and during the pandemic is examined. In the figure 4.7, we can see which travel modes are preferred in daily urban mobility, and the change between before and during the pandemic period.

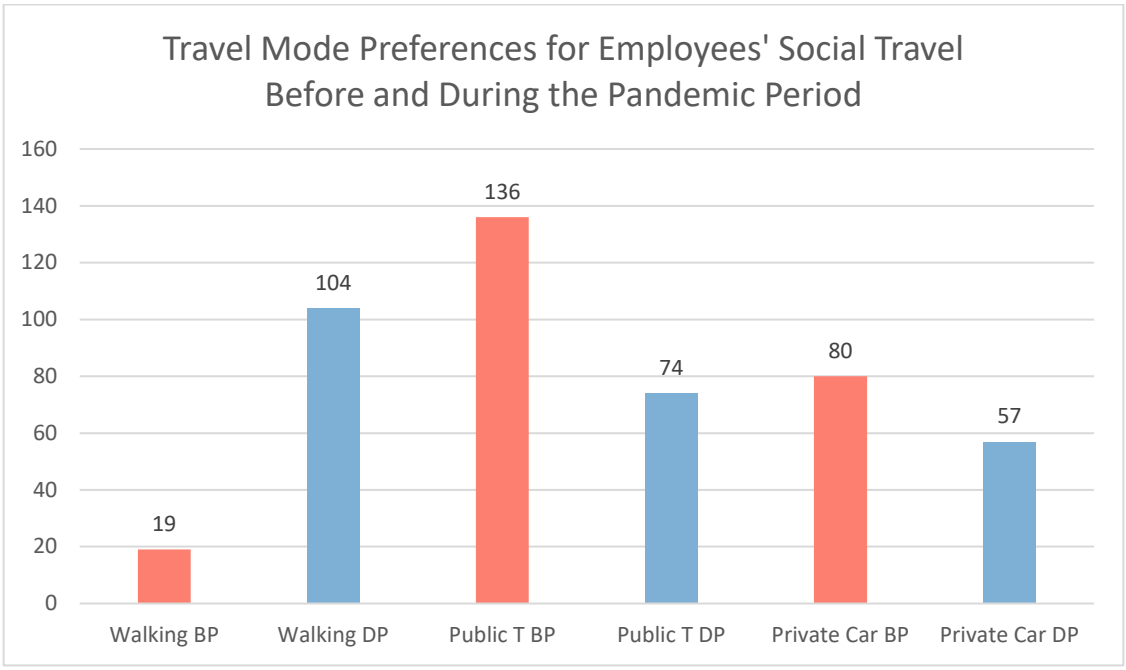

Figure 4.7 The mode of transport used in employees' social travels before and during the pandemic.

When we look at before the pandemic period, it is seen that public transportation is the most preferred travel mode in employees' social travels. In addition, private car is a highly preferred travel mode before the pandemic period. When the pandemic period was started, the favorite mode of travel for employees' social travel was changed to walking. Public transport usage has almost halved. Also, there is a slight decrease in the use of private car.

Table 4.18 Crosstab of McNemar-Bowker Test of before and during analysis of employees' social travel mode preferences.

BP_emp_soc_mod * DP_emp_soc_mod Crosstab							
			DP_emp_soc_mod				Total
				Priv_car	Pub_t	Walk	
BP_emp_soc_mod		Count	150	0	0	0	150
		% of Total	39,0%	0,0%	0,0%	0,0%	39,0%
	Priv_car	Count	0	43	2	35	80
		% of Total	0,0%	11,2%	0,5%	9,1%	20,8%
	Pub_t	Count	0	12	72	52	136
		% of Total	0,0%	3,1%	18,7%	13,5%	35,3%
	Walk	Count	0	2	0	17	19
		% of Total	0,0%	0,5%	0,0%	4,4%	4,9%
Total		Count	150	57	74	104	385
		% of Total	39,0%	14,8%	19,2%	27,0%	100%

When we examine crosstab, we see which travel mode preferences have changed from before the pandemic to the during the pandemic period. There are some important changes are seen in crosstab: Firstly, 35 people changed their preferences from private car to walking. Secondly, 12 people changed their preferences from public transportation to private car. Thirdly, 52 people changed their preferences from public transportation to walking. To understand significance of these changes, we can examine the McNemar-Bowker Test results in table 4.19.

Table 4.19 McNemar-Bowker Test of before and during analysis of employees' social travel mode preferences.

McNemar-Bowker Test			
	Value	df	Asymp. Sig. (2-sided)
McNemar-Bowker Test	88,575	3	,000
N of Valid Cases	385		

Since the p value is less than 0.05 in the McNemar-Bowker Test table, there is a significant difference between before the pandemic and during the pandemic period in employees' social travel mode preferences.

4.5.Changes on Travel Time for Social Travels

In this section, the change on travel time for students' and employees' social travels is examined. There are significant differences between the before pandemic and

pandemic periods in the travel times for social activities. Looking at the general average, there is aa 22.63 minutes of travel time difference in average. While the average difference in the travels made by the students for social travel is 20.06 minutes, the average difference in the travels made by the employees for social travel is 15.97 minutes. Those who did not make regular weekly travels at that time were not included in the average time calculation. They can be seen in the table 4.20 where the number of travels per week is calculated.

Table 4.20 Before pandemic and pandemic period social travel time averages.

Average Social Travel Time		
	Before the Pandemic	During the Pandemic
Total Mean	49,50649351	26,87012987
Student	48,63333333	28,56666667
Employee	51,82819383	35,85798817

Table 4.21 Crosstab of McNemar-Bowker Test of before and during analysis of students' and employees' social travel time.

BP_soc_time_clus * DP_soc_time_clus Crosstab							
			DP_soc_time_clus				**Total**
			0-15	16-30	31-45	46+	
BP_soc_time_clus	0-15	Count	16	2	0	0	18
		% of Total	4,2%	0,5%	0,0%	0,0%	4,7%
	16-30	Count	48	65	0	6	119
		% of Total	12,5%	16,9%	0,0%	1,6%	30,9%
	31-45	Count	22	20	30	8	80
		% of Total	5,7%	5,2%	7,8%	2,1%	20,8%
	46+	Count	57	46	11	54	168
		% of Total	14,8%	11,9%	2,9%	14,0%	43,6%
Total		Count	143	133	41	68	385
		% of Total	37,1%	34,5%	10,6%	17,7%	100%

When we examine the crosstab, we see how the travel times changed from before the pandemic to during the pandemic period. As a change, we see that, 48 people from 16-30min to 0-15min, 22 people from 31-45min to 0-15min, 20 people from 31-45min to 16-30min, 57 people from 45+min to 0-15min, 46 people from 45+min to 16-30min, 11 people from 45+min to 31-45min have reduced their travel time. In general, we can say that there is a decrease in social travel time. We can examine the McNemar-Bowker Test results to see if these changes are significant or insignificant in table 4.22.

Table 4.22 McNemar-Bowker Test of before and during analysis of students' and employees' social travel time.

McNemar-Bowker Test			
	Value	df	Asymp. Sig. (2-sided)
McNemar-Bowker Test	172,563	6	,000
N of Valid Cases	385		

Since the p value is less than 0.05 in the McNemar-Bowker Test table, there is a significant difference between before the pandemic and during the pandemic period in travel time for student's and employees' social travel time.

4.5.1. Changes on Travel Time for Student's Social Travels

In this section, the change on travel time for students' social travels are examined. When we examine the crosstab, we see how the travel times changed from before the pandemic to during the pandemic period. As a change, we see that, 17 people from 16-30min to 0-15min, 11 people from 31-45min to 0-15min, 8 people from 31-45min to 16-30min, 16 people from 46+min to 0-15min, 10 people from 45+min to 16-30min, 9 people from 45+min to 31-45min have reduced their travel time. In general, we can say that there is a decrease in social travel time at the rate in the previous analysis.

Table 4.23 Crosstab of McNemar-Bowker Test of before and during analysis of students' social travel time.

BP_stu_soc_time * DP_stu_soc_time Crosstab							
			DP_stu_soc_time				**Total**
			0-15	16-30	31-45	46+	
BP_stu_soc_time	0-15	Count	8	0	0	0	8
		% of Total	5,3%	0,0%	0,0%	0,0%	5,3%
	16-30	Count	17	31	0	4	52
		% of Total	11,3%	20,7%	0,0%	2,7%	34,7%
	31-45	Count	11	8	10	4	33
		% of Total	7,3%	5,3%	6,7%	2,7%	22,0%
	46+	Count	16	10	9	22	57
		% of Total	10,7%	6,7%	6,0%	14,7%	38,0%
Total		Count	52	49	19	30	150
		% of Total	34,7%	32,7%	12,7%	20,0%	100%

Table 4.24 McNemar-Bowker Test of before and during analysis of students' social travel time.

McNemar-Bowker Test			
	Value	df	Asymp. Sig. (2-sided)
McNemar-Bowker Test	56,495	6	,000
N of Valid Cases	150		

Since the p value is less than 0.05 in the McNemar-Bowker Test table, there is a significant difference between before the pandemic and during the pandemic period in travel time for students' social travel time.

4.5.2. Changes on Travel Time for Employees' Social Travels

In this section, the change on travel time for employees' social travels are examined. When we examine the crosstab, we see how the travel times changed from before the pandemic to during the pandemic period. As a change, we see that, 31 people from 16-30min to 0-15min, 11 people from 31-45min to 0-15min, 12 people from 31-45min to 16-30min, 41 people from 46+min to 0-15min, 36 people from 45+min to 16-30min have reduced their travel time. In general, we can say that there is a decrease in employees' social travel time.

Table 4.25 Crosstab of McNemar-Bowker Test of before and during analysis of employees' social travel time.

BP_emp_soc_time * DP_emp_soc_time Crosstab							
			DP_emp_soc_time				Total
			0-15	16-30	31-45	46+	
BP_emp_soc_time	0-15	Count	8	2	0	0	10
		% of Total	3,4%	0,9%	0,0%	0,0%	4,3%
	16-30	Count	31	34	0	2	67
		% of Total	13,2%	14,5%	0,0%	0,9%	28,5%
	31-45	Count	11	12	20	4	47
		% of Total	4,7%	5,1%	8,5%	1,7%	20,0%
	46+	Count	41	36	2	32	111
		% of Total	17,4%	15,3%	0,9%	13,6%	47,2%
Total		Count	91	84	22	38	235
		% of Total	38,7%	35,7%	9,4%	16,2%	100%

Table 4.26 McNemar-Bowker Test of before and during analysis of employees' social travel time.

McNemar-Bowker Test			
	Value	df	Asymp. Sig. (2-sided)
McNemar-Bowker Test	120,573	6	,000
N of Valid Cases	235		

Since the p value is less than 0.05 in the McNemar-Bowker Test table, there is a significant difference between before the pandemic and during the pandemic period in travel time for employees' social travel time.

4.6. Changes on Number of Weekly Social Travels

The number of travels made for weekly social activities also varies with the pandemic effects. In this section, the change on number of weekly social travels is examined. On the general average, there was a decrease of 1.88 travels for social activities per week. While there is a difference of 2 travels in the weekly social travels made by the students, the difference in the weekly social travels made by the employees is 1.81.

Table 4.27 The average of the weekly social travel numbers before and during the pandemic period.

Average Number of Weekly Social Travels		
	Before the Pandemic	During the Pandemic
Total Mean	3,241558442	1,355844156
Student	3,36	1,36
Employee	3,165957447	1,353191489

When we examine the crosstab, we see how the number of weekly social travels changed from before the pandemic to during the pandemic period. As a change, we see that, 116 people from 4+ travels to [0,1,2,3] travels, have reduced their number of weekly social travels. In general, we can say that there is a high decrease in number of weekly social travels.

Table 4.28 Crosstab of McNemar-Bowker Test of before and during analysis of students' and employees' number of weekly social travel.

BP_soc_week_clus * DP_soc_week_clus Crosstab					
			DP_soc_week_clus		Total
			[0,1,2,3]	4+	
BP_soc_ week_clus	[0,1,2,3]	Count	245	6	251
		% of Total	63,6%	1,6%	65,2%
	4+	Count	116	18	134
		% of Total	30,1%	4,7%	34,8%
Total		Count	361	24	385
		% of Total	93,8%	6,2%	100%

Table 4.29 McNemar-Bowker Test of before and during analysis of students' and employees' number of weekly social travel.

McNemar-Bowker Test		
	Value	Exact Sig. (2-sided)
McNemar Test		,000[a]
N of Valid Cases	385	
a. Binomial distribution used.		

Since the p value is less than 0.05 in the McNemar-Bowker Test table, there is a significant difference between before the pandemic and during the pandemic period in number of weekly social travels.

4.6.1. Changes on Number of Weekly Social Travels of Students

In this section, the change on number of weekly social travels of students is examined. When we examine the crosstab, we see how the number of weekly social travels of students changed from before the pandemic to during the pandemic period. As a change, we see that, 46 people from 4+ travels to [0,1,2,3] travels, have reduced their number of weekly social travels of students. In general, we can say that there is a decrease in number of weekly social travels of students.

Table 4.30 Crosstab of McNemar-Bowker Test of before and during analysis of students' number of weekly social travel.

BP_stu_soc_week_clus * DP_stu_soc_week_clus Crosstab					
			DP_stu_soc_week_clus		Total
			[0,1,2,3]	4+	
BP_stu_soc_week_clus	[0,1,2,3]	Count	94	2	96
		% of Total	62,7%	1,3%	64,0%
	4+	Count	46	8	54
		% of Total	30,7%	5,3%	36,0%
Total		Count	140	10	150
		% of Total	93,3%	6,7%	100%

Table 4.31 McNemar-Bowker Test of before and during analysis of students' number of weekly social travel.

McNemar-Bowker Test		
	Value	Exact Sig. (2-sided)
McNemar Test		,000[a]
N of Valid Cases	150	
a. Binomial distribution used.		

Since the p value is less than 0.05 in the McNemar-Bowker Test table, there is a significant difference between before the pandemic and during the pandemic period in number of weekly social travels of students.

4.6.2. Changes on Weekly Social Travels of Employees

In this section, the change on number of weekly social travels of employees is examined. When we examine the crosstab, we see how the number of weekly social travels of employees changed from before the pandemic to during the pandemic period. As a change, we see that, 70 people from 4+ travels to [0,1,2,3] travels, have reduced their number of weekly social travels of employees. In general, we can say that there is a high decrease in number of weekly social travels of students.

Table 4.32 Crosstab of McNemar-Bowker Test of before and during analysis of employees' number of weekly social travel.

BP_emp_soc_week_clus * DP_emp_soc_week_clus Crosstab					
			DP_emp_soc_week_clus		Total
			[0,1,2,3]	4+	
BP_emp_soc_week_clus	[0,1,2,3]	Count	151	4	155
		% of Total	64,3%	1,7%	66,0%
	4+	Count	70	10	80
		% of Total	29,8%	4,3%	34,0%
Total		Count	221	14	235
		% of Total	94,0%	6,0%	100%

Table 4.33 McNemar-Bowker Test of before and during analysis of employees' number of weekly social travel.

McNemar-Bowker Test		
	Value	Exact Sig. (2-sided)
McNemar Test		,000[a]
N of Valid Cases	235	
a. Binomial distribution used.		

Since the p value is less than 0.05 in the McNemar-Bowker Test table, there is a significant difference between before the pandemic and during the pandemic period in number of weekly social travels of employees.

CHAPTER 5

SIGNIFICANCE OF FACTORS OF TRAVEL PREFERENCES

In this analysis, an examination is made on the factors on travel preferences. This analysis has three level. The significance of factors on travel preferences, effect strength, and comparison before and during the pandemic. Two methods were used for these measurements. The significance of the factors on travel preferences was measured with the Chi-square Test. The strength of factors on travel preferences was measured with the Phi and Cramer's V Test. As a result of these measurements, comparison of the factors before and during the pandemic was made. The travel preferences examined within the scope of the factors affecting travel preferences with the Covid-19 Pandemic effects are as follows:

- School and work travels mode preferences before the pandemic period
- School and work travels mode preferences during the pandemic period
- School and work travels time before the pandemic period
- School and work travels time during the pandemic period
- Social travels mode preferences before the pandemic period
- Social travels mode preferences during the pandemic period
- Social travels time before the pandemic period
- Social travels time during the pandemic period

In this study, not only the changes in travel preferences due to the Covid-19 Pandemic, but also the factors affecting travel preferences are examined. Factors included in the analysis are:

- Age
- Gender
- Student/employee
- Education level
- Private car ownership

To apply the Chi Square Test, the collected variables must be categorized in a meaningful way. Although the surveys asked about service, taxi, bicycle, and scooter options, very few people preferred them. To achieve more meaningful results, these modes of travel were ignored when evaluating the travel mode preference results and travel time results. Bicycle-Scooter combined with walk and taxi and service combined with public transportation. Age groups were categorized according to young, young adult, middle adult, and advanced adulthood. Since students and employees determine the sample of the study, there is no advanced adulthood category, since both people who are in advanced adulthood and working are not encountered. Since no different preference was found, gender was categorized as male and female.

5.1.Changes of Importance Level of Travel Factors

In this section, we will examine the change of travel factors, which are the factors that directly affect travels, between before and during the pandemic period. As a result of the literature study, it was decided to examine five main travel factors. These factors are safety, comfort, cost, health, and travel time (travel speed).

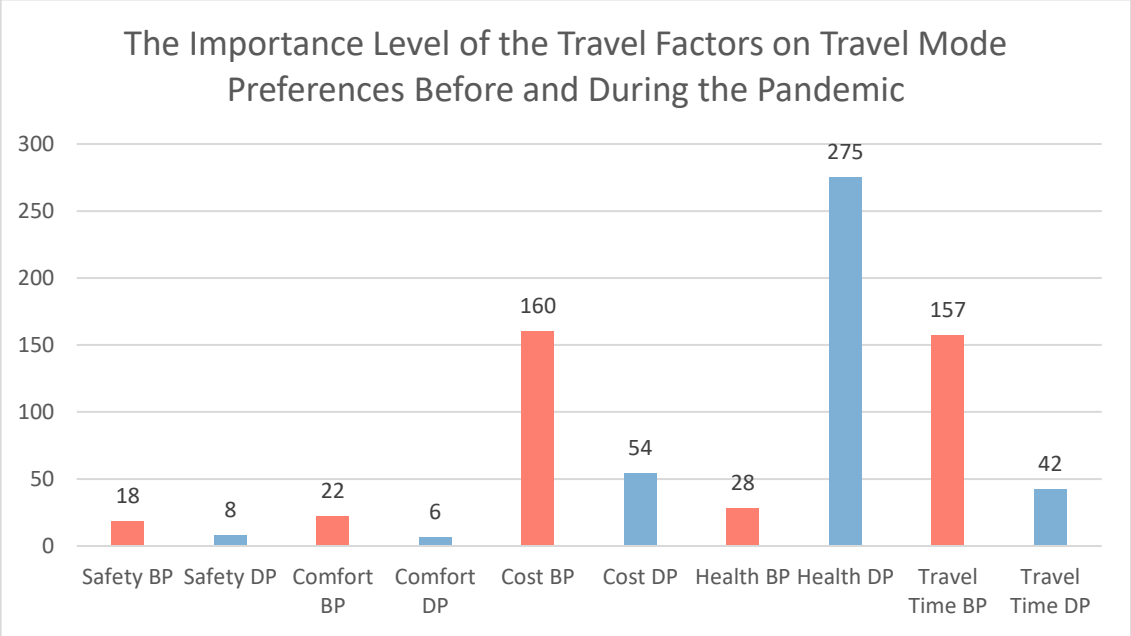

Figure 5.1 Comparison of important travel factors affecting travel mode preferences before and during the pandemic period.

As we can see from figure 5.1, the most important travel factors affecting the travel mode preferences were travel cost and travel time before the pandemic. Then health emerged as the most important factor during the pandemic period. This shows us that the pandemic has changed our priorities in travel preferences.

5.2. Factors on School and Work Travels Mode Preferences Before and During the Pandemic

In this section, we will examine the effect of age group, gender, student/employee, education level, private car ownership on school and work travels mode preferences before and during the pandemic. Factors will be compared before and during the pandemic. While we will examine significance of the effect with the Chi-square method, we will measure the strength of the effect with the Phi and Cramer's V method.

5.2.1. Significance of Age Group Factor

In this section, we will examine how the age group factor affects school and work travel mode preferences by comparing before and during the pandemic. We will first examine which groups prefer which travel mode from crosstab, and then the significance of the factor from the Chi-Square table.

Table 5.1 Crosstab of age effect on school and work travels mode preferences before pandemic.

Crosstab						
			BP_com_mod			**Total**
			Priv_car	Pub_t	Walk	
Age	6-17	Count	4	31	2	37
		% within Age	10,8%	83,8%	5,4%	100,0%
	18-40	Count	38	208	26	272
		% within Age	14,0%	76,5%	9,6%	100,0%
	41-65	Count	10	50	16	76
		% within Age	13,2%	65,8%	21,1%	100,0%
Total		Count	52	289	44	385
		% of Total	13,5%	75,1%	11,4%	100,0%

Table 5.2 Crosstab of age group effect on school and work travels mode preferences during the pandemic.

Crosstab						
			DP_com_mod			Total
			Priv_car	Pub_t	Walk	
Age	6-17	Count	10	25	2	37
		% within Age	27,0%	67,6%	5,4%	100,0%
	18-40	Count	69	179	24	272
		% within Age	25,4%	65,8%	8,8%	100,0%
	41-65	Count	23	39	14	76
		% within Age	30,3%	51,3%	18,4%	100,0%
Total		Count	102	243	40	385
		% of Total	26,5%	63,1%	10,4%	100,0%

If we make a comparison of crosstabs before and during the pandemic, we see that the use of public transport in general has decreased in all age groups. However, the most preferred travel mode in both before the pandemic period and during the pandemic period is public transport. It is seen that people in the three-age group prefer private vehicles instead of public transportation with the start of the pandemic period. The 41-65 is the age group that prefer public transportation at the lowest rate during the pandemic period, and walking rates are higher than other groups.

Table 5.3 Chi-Square Test of age effect on school and work travels mode preferences before pandemic.

Chi-Square Tests			
	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	9,733[a]	4	,045
Likelihood Ratio	8,869	4	,064
N of Valid Cases	385		
Phi	,159		,045
Cramer's V	,112		,045
a. 2 cells (22,2%) have expected count less than 5. The minimum expected count is 4,23.			

Table 5.4 Chi-Square Test of age group effect on school and work travels mode preferences during the pandemic.

Chi-Square Tests			
	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	8,892[a]	4	,064
Likelihood Ratio	8,319	4	,081
N of Valid Cases	385		
a. 1 cells (11,1%) have expected count less than 5. The minimum expected count is 3,84.			

When we look at the Chi-Square Test results before the pandemic period are not meaningful because the cell value is higher than 20%. Therefore, the age group effect on the travel mode preferences in school and work travels before the pandemic period is significant. The Chi-Square Test result of during the pandemic period was 0.064. In other words, the age group effect on the travel mode preference in school and work travels during the pandemic period is not significant.

5.2.2. Significance of Gender Factor

In this section, we will examine how the gender factor affects school and work travels mode preferences by comparing before and during the pandemic. We will first examine which groups prefer which travel mode from crosstab, and then the significance of the factor from the Chi-Square table.

Table 5.5 Crosstab of gender effect on school and work travels mode preferences before pandemic.

Crosstab						
			BP_com_mod			**Total**
			Priv_car	Pub_t	Walk	
Gender	Female	Count	18	134	26	178
		% within Gender	10,1%	75,3%	14,6%	100,0%
	Male	Count	34	155	18	207
		% within Gender	16,4%	74,9%	8,7%	100,0%
Total		Count	52	289	44	385
		% of Total	13,5%	75,1%	11,4%	100,0%

Table 5.6 Crosstab of gender effect on school and work travels mode preferences during the pandemic.

Crosstab						
			DP_com_mod			**Total**
			Priv_car	Pub_t	Walk	
Gender	Female	Count	50	98	30	178
		% within Gender	28,1%	55,1%	16,9%	100,0%
	Male	Count	52	145	10	207
		% within Gender	25,1%	70,0%	4,8%	100,0%
Total		Count	102	243	40	385
		% of Total	26,5%	63,1%	10,4%	100,0%

In crosstabs, it is seen that when the pandemic period begins, women's preference for public transportation for school and work travels decreases by 20.2%, but public transportation preference for men decreases by only 4.9%. When the pandemic period begins, it is observed that private car and walking preference for women increases compared to before the pandemic period, while the men's preference rate for private car increases, but the preference for walking decreases.

Table 5.7 Chi-Square Test of gender effect on school and work travels mode preferences before pandemic.

Chi-Square Tests			
	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	5,752[a]	2	,056
Likelihood Ratio	5,807	2	,055
N of Valid Cases	385		
a. 0 cells (0,0%) have expected count less than 5. The minimum expected count is 20,34.			

Table 5.8 Chi-Square Test of gender effect on school and work travels mode preferences during the pandemic.

Chi-Square Tests			
	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	17,042[a]	2	,000
Likelihood Ratio	17,466	2	,000
N of Valid Cases	385		
Phi	,210		,000
Cramer's V	,210		,000
a. 0 cells (0,0%) have expected count less than 5. The minimum expected count is 18,49.			

When we look at the result of Chi-Square Test of gender effect on school and work travels mode preferences before pandemic, the significance value was found to be 0.056. It means that the gender effect on school and work travel preferences before the pandemic is not significant. However, the gender effect during the pandemic period is significant. When we look at the Phi value, we see that the gender factor has a medium effect.

5.2.3. Significance of Student/Employee Factor

In this section, we will examine how the student/employee factor affects school and work travels mode preferences by comparing before and during the pandemic. We will first examine which groups prefer which travel mode from crosstab, and then the significance of the factor from the Chi-Square table.

Table 5.9 Crosstab of student/employee effect on school and work travels mode preferences before pandemic.

Crosstab						
			BP_com_mod			Total
			Priv_car	Pub_t	Walk	
Stu_Emp	Employee	Count	38	129	18	185
		% within Stu_Emp	20,5%	69,7%	9,7%	100,0%
	Student_Employee	Count	4	40	6	50
		% within Stu_Emp	8,0%	80,0%	12,0%	100,0%
	Student	Count	10	120	20	150
		% within Stu_Emp	6,7%	80,0%	13,3%	100,0%
Total		Count	52	289	44	385
		% of Total	13,5%	75,1%	11,4%	100,0%

Table 5.10 Crosstab of student/employee effect on school and work travels mode preferences during the pandemic.

Crosstab						
			DP_com_mod			Total
			Priv_car	Pub_t	Walk	
Stu_Emp	Employee	Count	62	109	14	185
		% within Stu_Emp	33,5%	58,9%	7,6%	100,0%
	Student_Employee	Count	14	32	4	50
		% within Stu_Emp	28,0%	64,0%	8,0%	100,0%
	Student	Count	26	102	22	150
		% within Stu_Emp	17,3%	68,0%	14,7%	100,0%
Total		Count	102	243	40	385
		% of Total	26,5%	63,1%	10,4%	100,0%

In crosstabs, it is seen that employees prefer more private car and students prefer walking more in both periods. When the pandemic period started, it was observed that while the walking preference increased in students, it decreased in employees. In the student-employee group, more private car preference increased when the pandemic period started.

Table 5.11 Chi-Square Test of student/employee effect on school and work travels mode preferences before pandemic.

Chi-Square Tests			
	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	15,403[a]	4	,004
Likelihood Ratio	15,863	4	,003
N of Valid Cases	385		
Phi	,200		,004
Cramer's V	,141		,004
a. 0 cells (0,0%) have expected count less than 5. The minimum expected count is 5,71.			

Table 5.12 Chi-Square Test of student/employee effect on school and work travels mode preferences during the pandemic.

Chi-Square Tests			
	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	13,658[a]	4	,008
Likelihood Ratio	13,925	4	,008
N of Valid Cases	385		
Phi	,188		,008
Cramer's V	,133		,008
a. 0 cells (0,0%) have expected count less than 5. The minimum expected count is 5,19.			

When we look at the result of Chi-Square Test of student/employee effect on school and work travels mode preferences before pandemic, the significance value was found to be 0.004. It means that the student/employee effect on school and work travel preferences before the pandemic is significant. When we look at the phi value, it is seen that student/employee factor has medium effect before the pandemic period. Also, the student/employee effect during the pandemic period is significant. When we look at the Phi value, we see that the student/employee factor has a weak effect.

5.2.4. Significance of Education Level Factor

In this section, we will examine how the education level factor affects school and work travels mode preferences by comparing before and during the pandemic. We will first examine which groups prefer which travel mode from crosstab, and then the significance of the factor from the Chi-Square table.

Table 5.13 Crosstab of education level effect on school and work travels mode preferences before pandemic.

Crosstab						
			BP_com_mod			Total
			Priv_car	Pub_t	Walk	
Education	High school	Count	14	79	6	99
		% within Education	14,1%	79,8%	6,1%	100,0%
	Master_doctorate	Count	10	38	6	54
		% within Education	18,5%	70,4%	11,1%	100,0%
	Primary school	Count	8	26	4	38
		% within Education	21,1%	68,4%	10,5%	100,0%
	Undgraduate	Count	20	146	28	194
		% within Education	10,3%	75,3%	14,4%	100,0%
Total		Count	52	289	44	385
		% of Total	13,5%	75,1%	11,4%	100,0%

Table 5.14 Crosstab of education level effect on school and work travels mode preferences during the pandemic.

Crosstab						
			DP_com_mod			Total
			Priv_car	Pub_t	Walk	
Education	High school	Count	26	69	4	99
		% within Education	26,3%	69,7%	4,0%	100,0%
	Master_doctorate	Count	26	24	4	54
		% within Education	48,1%	44,4%	7,4%	100,0%
	Primary school	Count	12	22	4	38
		% within Education	31,6%	57,9%	10,5%	100,0%
	Undgraduate	Count	38	128	28	194
		% within Education	19,6%	66,0%	14,4%	100,0%
Total		Count	102	243	40	385
		% of Total	26,5%	63,1%	10,4%	100,0%

In crosstabs, it is seen that while the preference of public transportation decreases during the pandemic period, the preference of private car increases in each education level group. Before the pandemic period, there is not much difference between the education groups in school and work travels mode preferences. However, some differences stand out during the pandemic period. In the pandemic period table, high school and undergraduate groups prefer public transportation more than other groups. Again, during the pandemic period, the master-doctorate group's private car preference is higher than that of other groups.

Table 5.15 Chi-Square Test of education level effect on school and work travels mode preferences before pandemic.

Chi-Square Tests			
	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	8,843[a]	6	,183
Likelihood Ratio	9,040	6	,171
N of Valid Cases	385		
a. 1 cells (8,3%) have expected count less than 5. The minimum expected count is 4,34.			

Table 5.16 Chi-Square Test of education level effect on school and work travels mode preferences during the pandemic.

Chi-Square Tests			
	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	24,858[a]	6	,000
Likelihood Ratio	24,525	6	,000
N of Valid Cases	385		
Phi	,254		,000
Cramer's V	,180		,000
a. 1 cells (8,3%) have expected count less than 5. The minimum expected count is 3,95.			

When we look at the result of Chi-Square Test of education level effect on school and work travels mode preferences before pandemic, the significance value was found to be 0.183. It means that the education level effect on school and work travel preferences before the pandemic is not significant. However, the education level effect during the pandemic period is significant. When we look at the Phi value, we see that the education level factor has medium effect.

5.2.5. Significance of Private Car Ownership Factor

In this section, we will examine how the private car ownership effects on school and work travels mode preferences by comparing before and during the pandemic. We will first examine which groups prefer which travel mode from crosstab, and then the significance of the factor from the Chi-Square table.

Table 5.17 Crosstab of private car owning effect on school and work travels mode preferences before pandemic.

Crosstab						
			BP_com_mod			Total
			Priv_car	Pub_t	Walk	
Own_privcar	0	Count	4	179	28	211
		% within Own_privcar	1,9%	84,8%	13,3%	100,0%
	1	Count	48	110	16	174
		% within Own_privcar	27,6%	63,2%	9,2%	100,0%
Total		Count	52	289	44	385
		% of Total	13,5%	75,1%	11,4%	100,0%

Table 5.18 Crosstab of private car owning effect on school and work travels mode preferences during the pandemic.

Crosstab						
			DP_com_mod			Total
			Priv_car	Pub_t	Walk	
Own_privcar	0	Count	6	181	24	211
		% within Own_privcar	2,8%	85,8%	11,4%	100,0%
	1	Count	96	62	16	174
		% within Own_privcar	55,2%	35,6%	9,2%	100,0%
Total		Count	102	243	40	385
		% of Total	26,5%	63,1%	10,4%	100,0%

The first thing that stands out in crosstabs is that private car ownership increases private car preferences in school and work travels during the pandemic. The rate of private car preference during the pandemic period is about twice as much as before the pandemic. This shows that people prefer private cars because of the pandemic.

Table 5.19 Chi-Square Test of private car owning effect on school and work travels mode preferences before pandemic.

Chi-Square Tests			
	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	53,920[a]	2	,000
Likelihood Ratio	60,271	2	,000
N of Valid Cases	385		
Phi	,374		,000
Cramer's V	,374		,000
a. 0 cells (0,0%) have expected count less than 5. The minimum expected count is 19,89.			

Table 5.20 Chi-Square Test of private car owning effect on school and work travels mode preferences during the pandemic.

Chi-Square Tests			
	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	136,997[a]	2	,000
Likelihood Ratio	154,675	2	,000
N of Valid Cases	385		
Phi	,597		,000
Cramer's V	,597		,000
a. 0 cells (0,0%) have expected count less than 5. The minimum expected count is 18,08.			

When we look at the result of Chi-Square Test of private car ownership effect on school and work travels mode preferences before pandemic, the significance value was found to be 0.000. It means that the private car ownership effect on school and work travel preferences before the pandemic is significant. When we look at the Phi value, we see that the private car ownership has a strong effect. Also, the private car ownership effect during the pandemic period is significant. When we look at the Phi value, we see that the education level has very strong effect.

5.3. Factors on School and Work Travel Time Before and During Pandemic

In this section, we will examine the effect of age group, gender, student/employee, education level, private car ownership on school and work travels time before and during the pandemic. Factors will be compared before and during the pandemic. While we will

examine significance of the effect with the Chi-square method, we will measure the strength of the effect with the Phi and Cramer's V method.

5.3.1. Significance of Age Group Factor

In this section, we will examine how the age group effects on school and work travel time by comparing before and during the pandemic. We will first examine how long does each group travel from crosstab, and then the significance of the factor from the Chi-Square table.

Table 5.21 Crosstab of age group effect on school and work travel time before the pandemic.

Crosstab							
			BP_com_time_clus				Total
			0-15	16-30	31-45	46+	
Age	6-17	Count	4	25	5	3	37
		% within Age	10,8%	67,6%	13,5%	8,1%	100,0%
	18-40	Count	40	86	55	90	271
		% within Age	14,8%	31,7%	20,3%	33,2%	100,0%
	41-65	Count	14	22	15	25	76
		% within Age	18,4%	28,9%	19,7%	32,9%	100,0%
Total		Count	58	133	75	118	384
		% of Total	15,1%	34,6%	19,5%	30,7%	100,0%

Table 5.22 Crosstab of age group effect on school and work travel time during the pandemic.

Crosstab							
			DP_com_time_clus				Total
			0-15	16-30	31-45	46+	
Age	6-17	Count	4	27	5	1	37
		% within Age	10,8%	73,0%	13,5%	2,7%	100,0%
	18-40	Count	39	85	61	85	270
		% within Age	14,4%	31,5%	22,6%	31,5%	100,0%
	41-65	Count	14	28	14	20	76
		% within Age	18,4%	36,8%	18,4%	26,3%	100,0%
Total		Count	57	140	80	106	383
		% of Total	14,9%	36,6%	20,9%	27,7%	100,0%

When we look at crosstabs, we see that there is not much change before and during the pandemic. When we examine the differences between age groups, we see that the travel times of most of the 6-17 age group are in the range of 16-30 minutes, while the travel times of most of other age groups are between 16-30 and 46+ minutes. These results are valid for both periods.

Table 5.23 Chi-Square Test of age group effect on school and work travel time before the pandemic.

Chi-Square Tests			
	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	21,569[a]	6	,001
Likelihood Ratio	21,752	6	,001
Linear-by-Linear Association	2,685	1	,101
N of Valid Cases	384		
Phi	,237		,001
Cramer's V	,168		,001
a. 0 cells (0,0%) have expected count less than 5. The minimum expected count is 5,59.			

Table 5.24 Chi-Square Test of age group effect on school and work travel time during the pandemic.

Chi-Square Tests			
	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	27,776[a]	6	,000
Likelihood Ratio	30,392	6	,000
Linear-by-Linear Association	1,436	1	,231
N of Valid Cases	383		
Phi	,269		,000
Cramer's V	,190		,000
a. 0 cells (0,0%) have expected count less than 5. The minimum expected count is 5,51.			

When we look at the result of Chi-Square Test of age group effect on school and work travel time before pandemic, the significance value was found to be 0.001. It means that the age group effect on school and work travel time before the pandemic is significant. When we look at the Phi value, we see that the age group has a medium effect. Also, the effect of the age group during the pandemic period is significant. When we look at the Phi value, we see that the age group has medium effect.

5.3.2. Significance of Gender Factor

In this section, we will examine how the gender effects on school and work travel time by comparing before and during the pandemic. We will first examine how long does each group travel from crosstab, and then the significance of the factor from the Chi-Square table.

Table 5.25 Crosstab of gender effect on school and work travel time before the pandemic.

Crosstab							
			BP_com_time_clus				Total
			0-15	16-30	31-45	46+	
Gender	Female	Count	31	62	29	56	178
		% within Gender	17,4%	34,8%	16,3%	31,5%	100,0%
	Male	Count	27	71	46	62	206
		% within Gender	13,1%	34,5%	22,3%	30,1%	100,0%
Total		Count	58	133	75	118	384
		% of Total	15,1%	34,6%	19,5%	30,7%	100,0%

Table 5.26 Crosstab of gender effect on school and work travel time during the pandemic.

Crosstab							
			DP_com_time_clus				Total
			0-15	16-30	31-45	46+	
Gender	Female	Count	28	70	31	48	177
		% within Gender	15,8%	39,5%	17,5%	27,1%	100,0%
	Male	Count	29	70	49	58	206
		% within Gender	14,1%	34,0%	23,8%	28,2%	100,0%
Total		Count	57	140	80	106	383
		% of Total	14,9%	36,6%	20,9%	27,7%	100,0%

There is not much difference between before and during pandemic period in crosstabs. When we look at the difference between men and women relatively before the pandemic period, it is seen that women travel more in 0-15 travel time than men, and men travel in 31-45 travel time more than women. When we look at the difference between women and men relatively during the pandemic period, it is seen that women travel more in 16-30 travel time than men, and men travel in 31-45 travel time more than women. However, it is noteworthy that these differences are small.

Table 5.27 Chi-Square Test of gender effect on school and work travel time before the pandemic.

Chi-Square Tests			
	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	3,018[a]	3	,389
Likelihood Ratio	3,034	3	,386
N of Valid Cases	384		
a. 0 cells (0,0%) have expected count less than 5. The minimum expected count is 26,89.			

Table 5.28 Chi-Square Test of gender effect on school and work travel time during the pandemic.

Chi-Square Tests			
	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	2,831[a]	3	,418
Likelihood Ratio	2,849	3	,415
N of Valid Cases	383		
a. 0 cells (0,0%) have expected count less than 5. The minimum expected count is 26,34.			

When we look at the result of Chi-Square Test of gender effect on school and work travel time before pandemic, the significance value was found to be 0.389. It means that the gender effect on school and work travel time before the pandemic is not significant. Also, the gender effect during the pandemic period is not significant.

5.3.3. Significance of Student/Employee Factor

In this section, we will examine how the student/employee factor affects school and work travel time by comparing before and during the pandemic. We will first examine how long does each group travel from crosstab, and then the significance of the factor from the Chi-Square table.

Table 5.29 Crosstab of student/employee effect on school and work travel time before the pandemic.

Crosstab							
			BP_com_time_clus				Total
			0-15	16-30	31-45	46+	
Stu_Emp	Employee	Count	31	56	40	57	184
		% within Stu_Emp	16,8%	30,4%	21,7%	31,0%	100,0%
	Student_Employee	Count	3	20	9	18	50
		% within Stu_Emp	6,0%	40,0%	18,0%	36,0%	100,0%
	Student	Count	24	57	26	43	150
		% within Stu_Emp	16,0%	38,0%	17,3%	28,7%	100,0%
Total		Count	58	133	75	118	384
		% of Total	15,1%	34,6%	19,5%	30,7%	100,0%

Table 5.30 Crosstab of student/employee effect on school and work travel time during the pandemic.

Crosstab							
			DP_com_time_clus				Total
			0-15	16-30	31-45	46+	
Stu_Emp	Employee	Count	33	67	36	48	184
		% within Stu_Emp	17,9%	36,4%	19,6%	26,1%	100,0%
	Stu_Emp	Count	4	20	13	13	50
		% within Stu_Emp	8,0%	40,0%	26,0%	26,0%	100,0%
	Student	Count	20	53	31	45	149
		% within Stu_Emp	13,4%	35,6%	20,8%	30,2%	100,0%
Total		Count	57	140	80	106	383
		% of Total	14,9%	36,6%	20,9%	27,7%	100,0%

When the difference between before and during the pandemic period in crosstabs is examined, there is a slight decrease in the travel times of the employees in their work travels, a slight increase in the work and school travel time of the employee-students, and a slight increase in the students' school travel time. There are some minor differences between the groups in the before the pandemic table and the pandemic period table. In both periods, all groups generally preferred 16-30 and 46+ travel times.

Table 5.31 Chi-Square Test of student/employee effect on school and work travel time before the pandemic.

Chi-Square Tests			
	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	6,591[a]	6	,360
Likelihood Ratio	7,383	6	,287
N of Valid Cases	384		
a. 0 cells (0,0%) have expected count less than 5. The minimum expected count is 7,55.			

Table 5.32 Chi-Square Test of student/employee effect on school and work travel time during the pandemic.

Chi-Square Tests			
	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	4,502[a]	6	,609
Likelihood Ratio	4,710	6	,581
N of Valid Cases	383		
a. 0 cells (0,0%) have expected count less than 5. The minimum expected count is 7,44.			

When we look at the result of Chi-Square Test of the student/employee effect on school and work travel time before pandemic, the significance value was found to be 0.360. It means that the student/employee effect on school and work travel time before the pandemic is not significant. Also, the effect of the student/employee factor during the pandemic period is not significant.

5.3.4. Significance of Education Level Factor

In this section, we will examine how the education level effects on school and work travel time by comparing before and during the pandemic. We will first examine how long does each group travel from crosstab, and then the significance of the factor from the Chi-Square table.

Table 5.33 Crosstab of education level effect on school and work travel time before the pandemic.

Crosstab							
			BP_com_time_clus				Total
			0-15	16-30	31-45	46+	
Education	High school	Count	8	34	27	30	99
		% within Education	8,1%	34,3%	27,3%	30,3%	100,0%
	Master_doctorate	Count	0	15	10	29	54
		% within Education	0,0%	27,8%	18,5%	53,7%	100,0%
	Primary school	Count	5	21	5	7	38
		% within Education	13,2%	55,3%	13,2%	18,4%	100,0%
	Undgraduate	Count	45	63	33	52	193
		% within Education	23,3%	32,6%	17,1%	26,9%	100,0%
Total		Count	58	133	75	118	384
		% of Total	15,1%	34,6%	19,5%	30,7%	100,0%

Table 5.34 Crosstab of education level effect on school and work travel time during the pandemic.

Crosstab							
			DP_com_time_clus				Total
			0-15	16-30	31-45	46+	
Education	High school	Count	9	44	22	24	99
		% within Education	9,1%	44,4%	22,2%	24,2%	100,0%
	Master_doctorate	Count	4	16	10	23	53
		% within Education	7,5%	30,2%	18,9%	43,4%	100,0%
	Primary school	Count	5	23	5	5	38
		% within Education	13,2%	60,5%	13,2%	13,2%	100,0%
	Undgraduate	Count	39	57	43	54	193
		% within Education	20,2%	29,5%	22,3%	28,0%	100,0%
Total		Count	57	140	80	106	383
		% of Total	14,9%	36,6%	20,9%	27,7%	100,0%

When looking at crosstabs, there are no significant differences between before and during the pandemic periods. Before pandemic period, it is seen that as the education level increases, school and business travel times also increase. During the pandemic period, this situation was disrupted by the undergraduate level group by reducing the travel time compared to before the pandemic period. However, there are differences in travel time according to education level in both periods.

Table 5.35 Chi-Square Test of education level effect on school and work travel time before the pandemic.

Chi-Square Tests			
	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	42,223[a]	9	,000
Likelihood Ratio	47,587	9	,000
N of Valid Cases	384		
Phi	,332		,000
Cramer's V	,191		,000
a. 0 cells (0,0%) have expected count less than 5. The minimum expected count is 5,74.			

Table 5.36 Chi-Square Test of education level effect on school and work travel time during the pandemic.

Chi-Square Tests			
	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	28,259[a]	9	,001
Likelihood Ratio	27,978	9	,001
N of Valid Cases	383		
Phi	,272		,001
Cramer's V	,157		,001
a. 0 cells (0,0%) have expected count less than 5. The minimum expected count is 5,66.			

When we look at the result of Chi-Square Test of the education level effect on school and work travel time before pandemic, the significance value was found to be 0.000. It means that the education level effect on school and work travel time before the pandemic is significant. When we look at the Phi value, we see that the education level has strong effect. Also, the effect of the education level during the pandemic period is significant. When we look at the Phi value, we see that the education level has medium effect.

5.3.5. Significance of Private Car Ownership Factor

In this section, we will examine how the private car ownership effects on school and work travel time by comparing before and during the pandemic. We will first examine how long does each group travel from crosstab, and then the significance of the effect of the factor from the Chi-Square table.

Table 5.37 Crosstab of private car owning effect on school and work travel time before the pandemic.

Crosstab							
			BP_com_time_clus				Total
			0-15	16-30	31-45	46+	
Own_privatecar	0	Count	31	72	40	67	210
		% within Own_privatecar	14,8%	34,3%	19,0%	31,9%	100,0%
	1	Count	27	61	35	51	174
		% within Own_privatecar	15,5%	35,1%	20,1%	29,3%	100,0%
Total		Count	58	133	75	118	384
		% of Total	15,1%	34,6%	19,5%	30,7%	100,0%

Table 5.38 Crosstab of private car owning effect on school and work travel time during the pandemic.

Crosstab							
			DP_com_time_clus				Total
			0-15	16-30	31-45	46+	
Own_privatecar	0	Count	25	67	47	71	210
		% within Own_privatecar	11,9%	31,9%	22,4%	33,8%	100,0%
	1	Count	32	73	33	35	173
		% within Own_privatecar	18,5%	42,2%	19,1%	20,2%	100,0%
Total		Count	57	140	80	106	383
		% of Total	14,9%	36,6%	20,9%	27,7%	100,0%

When crosstabs are examined, although there is no change in those who do not have a private car between before and during the pandemic period, there is a change in the school and work travel times of those who have a private car. School and work travel times of those who have a private car have decreased during the pandemic period. Therefore, while private car ownership did not make a difference in school and work travel times before the pandemic period, it made a difference during the pandemic period.

Table 5.39 Chi-Square Test of private car owning effect on school and work travel time before the pandemic.

Chi-Square Tests			
	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	,316[a]	3	,957
Likelihood Ratio	,317	3	,957
Linear-by-Linear Association	,198	1	,657
N of Valid Cases	384		
a. 0 cells (0,0%) have expected count less than 5. The minimum expected count is 26,28.			

Table 5.40 Chi-Square Test of private car owning effect on school and work travel time during the pandemic.

Chi-Square Tests			
	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	12,334[a]	3	,006
Likelihood Ratio	12,475	3	,006
Linear-by-Linear Association	11,937	1	,001
N of Valid Cases	383		
Phi	,179		,006
Cramer's V	,179		,006
a. 0 cells (0,0%) have expected count less than 5. The minimum expected count is 25,75.			

When we look at the result of Chi-Square Test of the private car ownership effect on school and work travel time before pandemic, the significance value was found to be 0.957. It means that the private car ownership effect on school and work travel time before the pandemic is not significant. However, the private car ownership effect during the pandemic period is significant. When we look at the Phi value, we see that the private car ownership has a weak effect.

5.4. Factors on Social Travels Mode Preferences Before and During the Pandemic

In this section, we will examine the effect of age group, gender, student/employee, education level, private car ownership on social travel mode preferences before and during the pandemic. Factors will be compared before and during the pandemic. While we will examine significance of the effect with the Chi-square method, we will measure the strength of the effect with the Phi and Cramer's V method.

5.4.1. Significance of Age Group Factor

In this section, we will examine how the age group effects on social travels mode preferences by comparing before and during the pandemic. We will first examine which groups prefer which travel mode from crosstab, and then the significance of the factor from the Chi-Square table.

Table 5.41 Crosstab of age group effect on social travels mode preferences before the pandemic.

Crosstab						
			BP_soc_mod			Total
			Priv_car	Pub_t	Walk	
Age	6-17	Count	8	15	14	37
		% within Age	21,6%	40,5%	37,8%	100,0%
	18-40	Count	55	187	30	272
		% within Age	20,2%	68,8%	11,0%	100,0%
	41-65	Count	31	42	3	76
		% within Age	40,8%	55,3%	3,9%	100,0%
Total		Count	94	244	47	385
		% of Total	24,4%	63,4%	12,2%	100,0%

Table 5.42 Crosstab of age group effect on social travels mode preferences during the pandemic.

Crosstab						
			DP_soc_mod			Total
			Priv_car	Pub_t	Walk	
Age	6-17	Count	5	3	29	37
		% within Age	13,5%	8,1%	78,4%	100,0%
	18-40	Count	57	106	109	272
		% within Age	21,0%	39,0%	40,1%	100,0%
	41-65	Count	19	21	36	76
		% within Age	25,0%	27,6%	47,4%	100,0%
Total		Count	81	130	174	385
		% of Total	21,0%	33,8%	45,2%	100,0%

When crosstabs are examined, it is seen that public transportation mode preference in social travels of all age groups decreased and the preference of walking increased during the pandemic period compared to before the pandemic period. While the private car preference rate of the 18-40 age group remained the same, the private car

preference rate of the 6-17 and 41-65 age group decreased during the pandemic period compared to before the pandemic period. Before the pandemic period, the 18-40 age group mostly preferred public transportation, the 41-65 age group mostly preferred private car and public transportation, and the 6-17 age group mostly preferred public transportation and walking. During the pandemic period, while the 6-17 age group mostly preferred walking, the 18-40 age group made a more balanced preference mainly public transportation and walking, and the 41-65 age group made a balanced preference, mainly walking.

Table 5.43 Chi-Square Test of age group effect on social travels mode preferences before the pandemic.

Chi-Square Tests			
	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	39,964[a]	4	,000
Likelihood Ratio	33,473	4	,000
N of Valid Cases	385		
Phi	,322		,000
Cramer's V	,228		,000
a. 1 cells (11,1%) have expected count less than 5. The minimum expected count is 4,52.			

Table 5.44 Chi-Square Test of age group effect on social travels mode preferences during the pandemic.

Chi-Square Tests			
	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	22,479[a]	4	,000
Likelihood Ratio	24,183	4	,000
N of Valid Cases	385		
Phi	,242		,000
Cramer's V	,171		,000
a. 0 cells (0,0%) have expected count less than 5. The minimum expected count is 7,78.			

When we look at the result of Chi-Square Test of the age group effect on social travels mode preferences before pandemic, the significance value was found to be 0.000. It means that the age group effect on social travels mode preferences before the pandemic is significant. When we look at the Phi value, we see that the age group has a strong effect.

Also, the age group effect during the pandemic period is significant. When we look at the Phi value, we see that the age group has a medium effect.

5.4.2. Significance of Gender Factor

In this section, we will examine how the gender effects on social travels mode preferences by comparing before and during the pandemic. We will first examine which groups prefer which travel mode from crosstab, and then the significance of the factor from the Chi-Square table.

Table 5.45 Crosstab of gender effect on social travels mode preferences before the pandemic.

Crosstab						
			BP_soc_mod			Total
			Priv_car	Pub_t	Walk	
Gender	Female	Count	38	128	12	178
		% within Gender	21,3%	71,9%	6,7%	100,0%
	Male	Count	56	116	35	207
		% within Gender	27,1%	56,0%	16,9%	100,0%
Total		Count	94	244	47	385
		% of Total	24,4%	63,4%	12,2%	100,0%

Table 5.46 Crosstab of gender effect on social travels mode preferences during the pandemic.

Crosstab						
			DP_soc_mod			Total
			Priv_car	Pub_t	Walk	
Gender	Female	Count	42	75	61	178
		% within Gender	23,6%	42,1%	34,3%	100,0%
	Male	Count	39	55	113	207
		% within Gender	18,8%	26,6%	54,6%	100,0%
Total		Count	81	130	174	385
		% of Total	21,0%	33,8%	45,2%	100,0%

When crosstabs are examined, clear differences between before and during the pandemic period stand out. If we examine the gender effect on social travels mode preferences: Before the pandemic period, it is seen that women prefer public transportation more than men, while men prefer private car and walking more. During the

pandemic period, it is seen that women prefer private car and public transportation more than men, and men prefer walking more than women.

Table 5.47 Chi-Square Test of gender effect on social travels mode preferences before the pandemic.

Chi-Square Tests			
	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	13,183[a]	2	,001
Likelihood Ratio	13,626	2	,001
N of Valid Cases	385		
Phi	,185		,001
Cramer's V	,185		,001
a. 0 cells (0,0%) have expected count less than 5. The minimum expected count is 21,73.			

Table 5.48 Chi-Square Test of gender effect on social travels mode preferences during the pandemic.

Chi-Square Tests			
	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	16,638[a]	2	,000
Likelihood Ratio	16,794	2	,000
N of Valid Cases	385		
Phi	,208		,000
Cramer's V	,208		,000
a. 0 cells (0,0%) have expected count less than 5. The minimum expected count is 37,45.			

When we look at the result of Chi-Square Test of the gender effect on social travels mode preferences before pandemic, the significance value was found to be 0.000. It means that the gender effect on social travels mode preferences before the pandemic is significant. When we look at the Phi value, we see that the gender has a weak effect. Also, the gender effect during the pandemic period is significant. When we look at the Phi value, we see that the gender has a medium effect.

5.4.3. Significance of Student/Employee Factor

In this section, we will examine how the student/employee factor affects social travels mode preferences by comparing before and during the pandemic. We will first

examine which groups prefer which travel mode from crosstab, and then the significance of the factor from the Chi-Square table.

Table 5.49 Crosstab of student/employee effect on social travels mode preferences before the pandemic.

Crosstab						
			BP_soc_mod			Total
			Priv_car	Pub_t	Walk	
Stu_Emp	Employee	Count	70	104	11	185
		% within Stu_Emp	37,8%	56,2%	5,9%	100,0%
	Student_Employee	Count	10	32	8	50
		% within Stu_Emp	20,0%	64,0%	16,0%	100,0%
	Student	Count	14	108	28	150
		% within Stu_Emp	9,3%	72,0%	18,7%	100,0%
Total		Count	94	244	47	385
		% of Total	24,4%	63,4%	12,2%	100,0%

Table 5.50 Crosstab of student/employee effect on social travels mode preferences during the pandemic.

Crosstab						
			DP_soc_mod			Total
			Priv_car	Pub_t	Walk	
Stu_Emp	Employee	Count	49	60	76	185
		% within Stu_Emp	26,5%	32,4%	41,1%	100,0%
		% of Total	12,7%	15,6%	19,7%	48,1%
	Student_Employee	Count	8	14	28	50
		% within Stu_Emp	16,0%	28,0%	56,0%	100,0%
		% of Total	2,1%	3,6%	7,3%	13,0%
	Student	Count	24	56	70	150
		% within Stu_Emp	16,0%	37,3%	46,7%	100,0%
		% of Total	6,2%	14,5%	18,2%	39,0%
Total		Count	81	130	174	385
		% within Stu_Emp	21,0%	33,8%	45,2%	100,0%
		% of Total	21,0%	33,8%	45,2%	100,0%

When crosstabs are examined, clear differences between before and during the pandemic period stand out. If we examine the student/employee effect on social travels

mode preferences: Before the pandemic period, while employees preferred private car more than other groups, the student group and student-employee group preferred public transportation mostly. During the pandemic period, there is an increase in walking preferences of all groups. During the pandemic period, while employees prefer a more balanced travel mode, student-employees mostly prefer walking, students mostly prefer walking and public transportation.

Table 5.51 Chi-Square Test of student/employee effect on social travels mode preferences before the pandemic.

Chi-Square Tests			
	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	42,942[a]	4	,000
Likelihood Ratio	45,945	4	,000
N of Valid Cases	385		
Phi	,334		,000
Cramer's V	,236		,000
a. 0 cells (0,0%) have expected count less than 5. The minimum expected count is 6,10.			

Table 5.52 Chi-Square Test of student/employee effect on social travels mode preferences during the pandemic.

Chi-Square Tests			
	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	8,234[a]	4	,083
Likelihood Ratio	8,196	4	,085
N of Valid Cases	385		
a. 0 cells (0,0%) have expected count less than 5. The minimum expected count is 10,52.			

When we look at the result of Chi-Square Test of the student/employee effect on social travels mode preferences before pandemic, the significance value was found to be 0.000. It means that the student/employee effect on social travels mode preferences before the pandemic is significant. When we look at the Phi value, we see that the student/employee has a strong effect. Also, the student/employee effect during the pandemic period is not significant with 0,083 significance value in Chi-Square.

5.4.4. Significance of Education Level Factor

In this section, we will examine how the education level effects on social travels mode preferences by comparing before and during the pandemic. We will first examine which groups prefer which travel mode from crosstab, and then the significance of the factor from the Chi-Square table.

Table 5.53 Crosstab of education level effect on social travels mode preferences before the pandemic.

Crosstab						
			BP_soc_mod			Total
			Priv_car	Pub_t	Walk	
Education	High school	Count	30	58	11	99
		% within Education	30,3%	58,6%	11,1%	100,0%
	Master_doctorate	Count	14	34	6	54
		% within Education	25,9%	63,0%	11,1%	100,0%
	Primary school	Count	16	10	12	38
		% within Education	42,1%	26,3%	31,6%	100,0%
	Undgraduate	Count	34	142	18	194
		% within Education	17,5%	73,2%	9,3%	100,0%
Total		Count	94	244	47	385
		% of Total	24,4%	63,4%	12,2%	100,0%

Table 5.54 Crosstab of education level effect on social travels mode preferences during the pandemic.

Crosstab						
			DP_soc_mod			Total
			Priv_car	Pub_t	Walk	
Education	High school	Count	15	24	60	99
		% within Education	15,2%	24,2%	60,6%	100,0%
	Master_doctorate	Count	17	12	25	54
		% within Education	31,5%	22,2%	46,3%	100,0%
	Primary school	Count	5	4	29	38
		% within Education	13,2%	10,5%	76,3%	100,0%
	Undgraduate	Count	44	90	60	194
		% within Education	22,7%	46,4%	30,9%	100,0%
Total		Count	81	130	174	385
		% of Total	21,0%	33,8%	45,2%	100,0%

When crosstabs are examined, clear differences between before and during the pandemic period stand out. If we examine the education level effect on social travels mode preferences: Before the pandemic period, it is seen that as the education level increases, the preference for private cars and walking decreases and the preference for public transportation increases. During the pandemic period, although the preference for public transportation decreases and the preference for walking increases in each education group, it is seen that the preference for public transportation is still high in the undergraduate level group.

Table 5.55 Chi-Square Test of education level effect on social travels mode preferences before the pandemic.

Chi-Square Tests			
	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	34,840[a]	6	,000
Likelihood Ratio	33,034	6	,000
N of Valid Cases	385		
Phi	,301		,000
Cramer's V	,213		,000
a. 1 cells (8,3%) have expected count less than 5. The minimum expected count is 4,64.			

Table 5.56 Chi-Square Test of education level effect on social travels mode preferences during the pandemic.

Chi-Square Tests			
	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	47,925[a]	6	,000
Likelihood Ratio	48,961	6	,000
N of Valid Cases	385		
Phi	,353		,000
Cramer's V	,249		,000
a. 0 cells (0,0%) have expected count less than 5. The minimum expected count is 7,99.			

When we look at the result of Chi-Square Test of the education level effect on social travels mode preferences before pandemic, the significance value was found to be 0.000. It means that the education level effect on social travels mode preferences before the pandemic is significant. When we look at the Phi value, we see that the education level has a strong effect. Also, the education level effect during the pandemic period is

not significant with 0,000 significance value in Chi-Square. When we look at the Phi value, we see that the education level has a strong effect.

5.4.5. Significance of Private Car Owning Factor

In this section, we will examine how the private car owning effects on social travels mode preferences by comparing before and during the pandemic. We will first examine which groups prefer which travel mode from crosstab, and then the significance of the factor from the Chi-Square table.

Table 5.57 Crosstab of private car owning effect on social travels mode preferences before the pandemic.

Crosstab						
			BP_soc_mod			Total
			Priv_car	Pub_t	Walk	
Own_privatecar	0	Count	10	162	39	211
		% within Own_privatecar	4,7%	76,8%	18,5%	100,0%
	1	Count	84	82	8	174
		% within Own_privatecar	48,3%	47,1%	4,6%	100,0%
Total		Count	94	244	47	385
		% of Total	24,4%	63,4%	12,2%	100,0%

Table 5.58 Crosstab of private car owning effect on social travels mode preferences during the pandemic.

Crosstab						
			DP_soc_mod			Total
			Priv_car	Pub_t	Walk	
Own_privatecar	0	Count	13	107	91	211
		% within Own_privatecar	6,2%	50,7%	43,1%	100,0%
	1	Count	68	23	83	174
		% within Own_privatecar	39,1%	13,2%	47,7%	100,0%
Total		Count	81	130	174	385
		% of Total	21,0%	33,8%	45,2%	100,0%

When crosstabs are examined, clear differences between before and during the pandemic period stand out. If we examine the private car owning effect on social travels mode preferences: Before the pandemic period, those who do not own a private car mostly prefer public transportation, while those who own a private car mostly prefer private car and public transportation. During the pandemic period, those who do not have a private car preferred public transportation and walking, while those who own a private car preferred private car and walking.

Table 5.59 Chi-Square Test of private car owning effect on social travels mode preferences before the pandemic.

Chi-Square Tests			
	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	102,321[a]	2	,000
Likelihood Ratio	112,032	2	,000
N of Valid Cases	385		
Phi	,516		,000
Cramer's V	,516		,000
a. 0 cells (0,0%) have expected count less than 5. The minimum expected count is 21,24.			

Table 5.60 Chi-Square Test of private car owning effect on social travels mode preferences during the pandemic.

Chi-Square Tests			
	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	89,259[a]	2	,000
Likelihood Ratio	96,615	2	,000
N of Valid Cases	385		
Phi	,481		,000
Cramer's V	,481		,000
a. 0 cells (0,0%) have expected count less than 5. The minimum expected count is 36,61.			

When we look at the result of Chi-Square Test of the private car owning effect on social travels mode preferences before pandemic, the significance value was found to be 0.000. It means that the private car owning effect on social travels mode preferences before the pandemic is significant. When we look at the Phi value, we see that the private car owning has a very strong effect. Also, the private car owning effect during the pandemic period is significant with 0,000 significance value in Chi-Square. When we look at the Phi value, we see that the private car owning has a very strong effect.

5.5.Factors on Social Travels Time Before and During the Pandemic

In this section, we will examine the effect of age group, gender, student/employee, education level, private car ownership on social travels time before and during the pandemic. Factors will be compared before and during the pandemic. While we will examine significance of the effect with the Chi-square method, we will measure the strength of the effect with the Phi and Cramer's V method.

5.5.1. Significance of Age Group Factor

In this section, we will examine how the age group factor affects social travels time by comparing before and during the pandemic. We will first examine which groups prefer which travel mode from crosstab, and then the significance of the factor from the Chi-Square table.

Table 5.61 Crosstab of age group effect on social travels time before the pandemic.

Crosstab							
			BP_soc_time_clus				Total
			0-15	16-30	31-45	46+	
Age	6-17	Count	2	22	7	6	37
		% within Age	5,4%	59,5%	18,9%	16,2%	100,0%
	18-40	Count	15	76	53	128	272
		% within Age	5,5%	27,9%	19,5%	47,1%	100,0%
	41-65	Count	1	21	20	34	76
		% within Age	1,3%	27,6%	26,3%	44,7%	100,0%
Total		Count	18	119	80	168	385
		% of Total	4,7%	30,9%	20,8%	43,6%	100,0%

Table 5.62 Crosstab of age group effect on social travels time during the pandemic.

Crosstab							
			DP_soc_time_clus				Total
			0-15	16-30	31-45	46+	
Age	6-17	Count	16	19	0	2	37
		% within Age	43,2%	51,4%	0,0%	5,4%	100,0%
	18-40	Count	97	80	35	60	272
		% within Age	35,7%	29,4%	12,9%	22,1%	100,0%
	41-65	Count	30	34	6	6	76
		% within Age	39,5%	44,7%	7,9%	7,9%	100,0%
Total		Count	143	133	41	68	385
		% of Total	37,1%	34,5%	10,6%	17,7%	100,0%

When crosstabs are examined, clear differences between before and during the pandemic period stand out. If we examine the age group effect on social travels mode preferences: Before the pandemic period, the social travel time of most of the 6-17 age group is 16-30 minutes. Although the travel time of the 18-40 age group and most of the 41-65 age group is 46+ minutes, a more balanced distribution is observed before the pandemic. During the pandemic period, social travel time of most of all age groups are 0-15 minutes and 16-30 minutes, but few people in the 6-17 age group and 41-65 age group travel 31-45 and 46+ minutes, while there are more people in the 18-40 age group who travel 31-45 and 46+ minutes.

Table 5.53 Chi-Square Test of age group effect on social travels time before the pandemic.

Chi-Square Tests			
	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	21,612[a]	6	,001
Likelihood Ratio	22,198	6	,001
Linear-by-Linear Association	8,653	1	,003
N of Valid Cases	385		
Phi	,237		,001
Cramer's V	,168		,001
a. 2 cells (16,7%) have expected count less than 5. The minimum expected count is 1,73.			

Table 5.64 Chi-Square Test of age group effect on social travels time during the pandemic.

Chi-Square Tests			
	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	23,995[a]	6	,001
Likelihood Ratio	29,454	6	,000
Linear-by-Linear Association	,092	1	,761
N of Valid Cases	385		
Phi	,250		,001
Cramer's V	,177		,001
a. 1 cells (8,3%) have expected count less than 5. The minimum expected count is 3,94.			

When we look at the result of Chi-Square Test of the age group effect on social travels time before pandemic, the significance value was found to be 0.001. It means that the age group effect on social travels time before the pandemic is significant. When we look at the Phi value, we see that the age group has a medium effect. Also, the age group

effect during the pandemic period is significant with 0,000 significance value in Chi-Square. When we look at the Phi value, we see that the age group has a medium effect.

5.5.2. Significance of Gender Factor

In this section, we will examine how the gender effects on social travels time by comparing before and during the pandemic. We will first examine which groups prefer which travel mode from crosstab, and then the significance of the factor from the Chi-Square table.

Table 5.65 Crosstab of gender effect on social travels time before the pandemic.

Crosstab							
			BP_soc_time_clus				Total
			0-15	16-30	31-45	46+	
Gender	Female	Count	6	50	50	72	178
		% within Gender	3,4%	28,1%	28,1%	40,4%	100,0%
	Male	Count	12	69	30	96	207
		% within Gender	5,8%	33,3%	14,5%	46,4%	100,0%
Total		Count	18	119	80	168	385
		% of Total	4,7%	30,9%	20,8%	43,6%	100,0%

Table 5.66 Crosstab of gender effect on social travels time during the pandemic.

Crosstab							
			DP_soc_time_clus				Total
			0-15	16-30	31-45	46+	
Gender	Female	Count	62	57	28	31	178
		% within Gender	34,8%	32,0%	15,7%	17,4%	100,0%
	Male	Count	81	76	13	37	207
		% within Gender	39,1%	36,7%	6,3%	17,9%	100,0%
Total		Count	143	133	41	68	385
		% of Total	37,1%	34,5%	10,6%	17,7%	100,0%

When crosstabs are examined, clear differences between before and during the pandemic period stand out. During the pandemic period, a decrease in social travel times is observed. If we examine the gender effect on social travels mode preferences: It is seen

that before the pandemic, women travel 31-45 minutes more than men, and men travel 16-30 and 46+ minutes more than women. During the pandemic period, women travel 31-45 minutes more than men, men travel 0-15 and 16-30 minutes more than women.

Table 5.67 Chi-Square Test of gender effect on social travels time before the pandemic.

Chi-Square Tests			
	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	11,342[a]	3	,010
Likelihood Ratio	11,393	3	,010
N of Valid Cases	385		
Phi	,172		,010
Cramer's V	,172		,010
a. 0 cells (0,0%) have expected count less than 5. The minimum expected count is 8,32.			

Table 5.68 Chi-Square Test of gender effect on social travels time during the pandemic.

Chi-Square Tests			
	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	9,123[a]	3	,028
Likelihood Ratio	9,216	3	,027
N of Valid Cases	385		
Phi	,154		,028
Cramer's V	,154		,027
a. 0 cells (0,0%) have expected count less than 5. The minimum expected count is 18,96.			

When we look at the result of Chi-Square Test of the gender effect on social travels time before pandemic, the significance value was found to be 0.010. It means that the gender effect on social travels time before the pandemic is significant. When we look at the Phi value, we see that the gender factor has a weak effect. Also, the gender effect during the pandemic period is significant with 0,028 significance value in Chi-Square. When we look at the Phi value, we see that the gender factor has a weak effect.

5.5.3. Significance of Student/Employee Factor

In this section, we will examine how the student/employee effects on social travels time by comparing before and during the pandemic. We will first examine which groups

prefer which travel mode from crosstab, and then the significance of the factor from the Chi-Square table.

Table 5.69 Crosstab of student/employee effect on social travels time before the pandemic.

Crosstab							
			BP_soc_time_clus				Total
			0-15	16-30	31-45	46+	
Stu_Emp	Employee	Count	6	51	37	91	185
		% within Stu_Emp	3,2%	27,6%	20,0%	49,2%	100,0%
	Student_Employee	Count	4	16	10	20	50
		% within Stu_Emp	8,0%	32,0%	20,0%	40,0%	100,0%
	Student	Count	8	52	33	57	150
		% within Stu_Emp	5,3%	34,7%	22,0%	38,0%	100,0%
Total		Count	18	119	80	168	385
		% of Total	4,7%	30,9%	20,8%	43,6%	100,0%

Table 5.70 Crosstab of student/employee effect on social travels time during the pandemic.

Crosstab							
			DP_soc_time_clus				Total
			0-15	16-30	31-45	46+	
Stu_Emp	Employee	Count	75	66	16	28	185
		% within Stu_Emp	40,5%	35,7%	8,6%	15,1%	100,0%
	Student_Employee	Count	16	18	6	10	50
		% within Stu_Emp	32,0%	36,0%	12,0%	20,0%	100,0%
	Student	Count	52	49	19	30	150
		% within Stu_Emp	34,7%	32,7%	12,7%	20,0%	100,0%
Total		Count	143	133	41	68	385
		% of Total	37,1%	34,5%	10,6%	17,7%	100,0%

When crosstabs are examined, clear differences between before and during the pandemic period stand out. During the pandemic period, a decrease in social travel times is observed. If we examine the student/employee effect on social travels mode preferences: Before the pandemic period, all groups showed a similar distribution, with the majority traveling for social for 46+ minutes. During the pandemic period, all groups

showed a similar distribution, with the majority traveling for 0-15 minutes and 16-30 minutes for social activities.

Table 5.71 Chi-Square Test of student/employee effect on social travels time before the pandemic.

Chi-Square Tests			
	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	6,232[a]	6	,398
Likelihood Ratio	6,116	6	,410
N of Valid Cases	385		
a. 1 cells (8,3%) have expected count less than 5. The minimum expected count is 2,34.			

Table 5.72 Chi-Square Test of student/employee effect on social travels time during the pandemic.

Chi-Square Tests			
	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	4,073[a]	6	,667
Likelihood Ratio	4,102	6	,663
N of Valid Cases	385		
a. 0 cells (0,0%) have expected count less than 5. The minimum expected count is 5,32.			

When we look at the result of Chi-Square Test of the student/employee effect on social travels time before pandemic, the significance value was found to be 0.398. It means that the student/employee effect on social travels time before the pandemic is not significant. Also, the effect of the student/employee during the pandemic period is not significant with 0,667 significance value in Chi-Square.

5.5.4. Significance of Education Level Factor

In this section, we will examine how the education level effects on social travels time by comparing before and during the pandemic. We will first examine which groups prefer which travel mode from crosstab, and then the significance of the factor from the Chi-Square table.

Table 5.73 Crosstab of education level effect on social travels time before the pandemic.

Crosstab							
			BP_soc_time_clus				Total
			0-15	16-30	31-45	46+	
Education	High school	Count	8	27	14	50	99
		% within Education	8,1%	27,3%	14,1%	50,5%	100,0%
	Master_doctorate	Count	4	18	14	18	54
		% within Education	7,4%	33,3%	25,9%	33,3%	100,0%
	Primary school	Count	2	16	6	14	38
		% within Education	5,3%	42,1%	15,8%	36,8%	100,0%
	Undgraduate	Count	4	58	46	86	194
		% within Education	2,1%	29,9%	23,7%	44,3%	100,0%
Total		Count	18	119	80	168	385
		% of Total	4,7%	30,9%	20,8%	43,6%	100,0%

Table 5.74 Crosstab of education level effect on social travels time during the pandemic.

Crosstab							
			DP_soc_time_clus				Total
			0-15	16-30	31-45	46+	
Education	High school	Count	41	40	4	14	99
		% within Education	41,4%	40,4%	4,0%	14,1%	100,0%
	Master_doctorate	Count	18	22	5	9	54
		% within Education	33,3%	40,7%	9,3%	16,7%	100,0%
	Primary school	Count	16	22	0	0	38
		% within Education	42,1%	57,9%	0,0%	0,0%	100,0%
	Undgraduate	Count	68	49	32	45	194
		% within Education	35,1%	25,3%	16,5%	23,2%	100,0%
Total		Count	143	133	41	68	385
		% of Total	37,1%	34,5%	10,6%	17,7%	100,0%

When crosstabs are examined, clear differences between before and during the pandemic period stand out. During the pandemic period, a decrease in social travel times is observed. If we examine the education level effect on social travels mode preferences: Before the pandemic period, it is seen that the social travel times of groups of various education levels show a similar distribution. During the pandemic, social travel times seem to be higher at higher education.

Table 5.75 Chi-Square Test of education level effect on social travels time before the pandemic.

Chi-Square Tests			
	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	15,165[a]	9	,087
Likelihood Ratio	15,514	9	,078
N of Valid Cases	385		
a. 3 cells (18,8%) have expected count less than 5. The minimum expected count is 1,78.			

Table 5.76 Chi-Square Test of education level effect on social travels time during the pandemic.

Chi-Square Tests			
	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	38,833[a]	9	,000
Likelihood Ratio	49,093	9	,000
N of Valid Cases	385		
Phi	,318		,000
Cramer's V	,183		,000
a. 1 cells (6,3%) have expected count less than 5. The minimum expected count is 4,05.			

When we look at the result of Chi-Square Test of the education level effect on social travels time before pandemic, the significance value was found to be 0.087. It means that the education level effect on social travels time before the pandemic is not significant. However, the effect of the education level during the pandemic period is significant with 0,000 significance value in Chi-Square. When we look at the Phi value, we see that the education level has a strong effect.

5.5.5. Significance of Private Car Owning Factor

In this section, we will examine how the private car owning effects on social travels time by comparing before and during the pandemic. We will first examine which groups prefer which travel mode from crosstab, and then the significance of the factor from the Chi-Square table.

Table 5.77 Crosstab of private car owning effect on social travels time before the pandemic.

Crosstab							
			BP_soc_time_clus				Total
			0-15	16-30	31-45	46+	
Own_privatecar	0	Count	14	85	30	82	211
		% within Own_privatecar	6,6%	40,3%	14,2%	38,9%	100,0%
	1	Count	4	34	50	86	174
		% within Own_privatecar	2,3%	19,5%	28,7%	49,4%	100,0%
Total		Count	18	119	80	168	385
		% of Total	4,7%	30,9%	20,8%	43,6%	100,0%

Table 5.78 Crosstab of private car owning effect on social travels time during the pandemic.

Crosstab							
			DP_soc_time_clus				Total
			0-15	16-30	31-45	46+	
Own_privatecar	0	Count	75	75	26	35	211
		% within Own_privatecar	35,5%	35,5%	12,3%	16,6%	100,0%
	1	Count	68	58	15	33	174
		% within Own_privatecar	39,1%	33,3%	8,6%	19,0%	100,0%
Total		Count	143	133	41	68	385
		% of Total	37,1%	34,5%	10,6%	17,7%	100,0%

When crosstabs are examined, clear differences can be seen between before and during the pandemic period. During the pandemic period, a decrease in social travel times is observed. If we examine the private car owning effect on social travels mode preferences: Before the pandemic period, those who do not own a private car have less travel time than those who own a private car. During the pandemic period, both groups reduced their social travel times and showed a similar distribution.

Table 5.79 Chi-Square Test of private car owning effect on social travels time before the pandemic.

Chi-Square Tests			
	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	29,222[a]	3	,000
Likelihood Ratio	30,052	3	,000
Linear-by-Linear Association	16,323	1	,000
N of Valid Cases	385		
Phi	,276		,000
Cramer's V	,276		,000
a. 0 cells (0,0%) have expected count less than 5. The minimum expected count is 8,14.			

Table 5.80 Chi-Square Test of private car owning effect on social travels time during the pandemic.

Chi-Square Tests			
	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	1,988[a]	3	,575
Likelihood Ratio	2,007	3	,571
Linear-by-Linear Association	,050	1	,823
N of Valid Cases	385		
a. 0 cells (0,0%) have expected count less than 5. The minimum expected count is 18,53.			

When we look at the result of Chi-Square Test of the private car owning effect on social travels time before pandemic, the significance value was found to be 0.000. It means that the private car owning effect on social travels time before the pandemic is significant. When we look at the Phi value, we see that the private car owning has a medium effect. However, the effect of the private car owning during the pandemic period is not significant with 0,575 significance value in Chi-Square.

5.6. Factors on Weekly Number of Social Travel Before Pandemic

In this section, we will examine the effect of age group, gender, student/employee, education level, private car ownership on weekly number of social travels before and during the pandemic. Factors will be compared before and during the pandemic. While we will examine significance of the effect with the Chi-square method, we will measure the strength of the effect with the Phi and Cramer's V method.

5.6.1. Significance of Age Group Factor

In this section, we will examine how the age group effects on weekly number of social travels by comparing before and during the pandemic. We will first examine which groups prefer which travel mode from crosstab, and then the significance of the factor from the Chi-Square table.

Table 5.81 Crosstab of age group effect on weekly number of social travels before the pandemic.

Crosstab					
			BP_soc_week_clus		**Total**
			[0,1,2,3]	4+	
Age	6-17	Count	29	8	37
		% within Age	78,4%	21,6%	100,0%
	18-40	Count	164	108	272
		% within Age	60,3%	39,7%	100,0%
	41-65	Count	58	18	76
		% within Age	76,3%	23,7%	100,0%
Total		Count	251	134	385
		% of Total	65,2%	34,8%	100,0%

Table 5.82 Crosstab of age group effect on weekly number of social travels during the pandemic.

Crosstab					
			DP_soc_week_clus		**Total**
			[0,1,2,3]	4+	
Age	6-17	Count	37	0	37
		% within Age	100,0%	0,0%	100,0%
	18-40	Count	250	22	272
		% within Age	91,9%	8,1%	100,0%
	41-65	Count	74	2	76
		% within Age	97,4%	2,6%	100,0%
Total		Count	361	24	385
		% of Total	93,8%	6,2%	100,0%

When crosstabs are examined, clear differences can be seen between before and during the pandemic period. During the pandemic period, a decrease in number of weekly

social travel is observed. If we examine the age group effect on weekly number of social travels: During the pandemic period, the majority of 6-17 and 41-65 age groups seem to make less than 4 social travels per week. In the 18-40 age group, more people make more than 4 social travels per week compared to other age groups. During the pandemic period, all the 6-17 age group made less than 4 social travels per week, while the majority of the 18-40 and 41-65 age groups made less than 4 travels.

Table 5.83 Chi-Square Test of age group effect on weekly number of social travel before the pandemic.

Chi-Square Tests			
	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	9,855[a]	2	,007
Likelihood Ratio	10,299	2	,006
Linear-by-Linear Association	,515	1	,473
N of Valid Cases	385		
Phi	,160		,007
Cramer's V	,160		,007
a. 0 cells (0,0%) have expected count less than 5. The minimum expected count is 12,88.			

Table 5.84 Chi-Square Test of age group effect on weekly number of social travel during the pandemic.

Chi-Square Tests			
	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	5,747[a]	2	,056
Likelihood Ratio	8,364	2	,015
Linear-by-Linear Association	,029	1	,865
N of Valid Cases	385		
a. 2 cells (33,3%) have expected count less than 5. The minimum expected count is 2,31.			

When we look at the result of Chi-Square Test of the age group effect on number of weekly social travels before pandemic, the significance value was found to be 0.007. It means that the age group effect on number of weekly social travels before the pandemic is significant. When we look at the Phi value, we see that the age group factor has a weak effect. However, the effect of the age group factor during the pandemic period has no meaningful result, because the cell value is over 20%.

5.6.2. Significance of Gender Factor

In this section, we will examine how the gender effects on weekly number of social travels by comparing before and during the pandemic. We will first examine which groups prefer which travel mode from crosstab, and then the significance of the factor from the Chi-Square table.

Table 5.85 Crosstab of gender effect on weekly number of social travels before the pandemic.

Crosstab					
			BP_soc_week_clus		Total
			[0,1,2,3]	4+	
Gender	Female	Count	113	65	178
		% within Gender	63,5%	36,5%	100,0%
	Male	Count	138	69	207
		% within Gender	66,7%	33,3%	100,0%
Total		Count	251	134	385
		% of Total	65,2%	34,8%	100,0%

Table 5.86 Crosstab of gender effect on weekly number of social travels during the pandemic.

Crosstab					
			DP_soc_week_clus		Total
			[0,1,2,3]	4+	
Gender	Female	Count	168	10	178
		% within Gender	94,4%	5,6%	100,0%
	Male	Count	193	14	207
		% within Gender	93,2%	6,8%	100,0%
Total		Count	361	24	385
		% of Total	93,8%	6,2%	100,0%

When crosstabs are examined, clear differences can be seen between before and during the pandemic period. During the pandemic period, a decrease in number of weekly social travel is observed. If we examine the gender effect on weekly number of social travels: There is no difference between the number of weekly social travels of men and women before and during the pandemic period.

Table 5.87 Chi-Square Test of gender effect on weekly number of social travels before the pandemic.

Chi-Square Tests					
	Value	df	Asymp. Sig. (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)
Pearson Chi-Square	,427[a]	1	,513		
Continuity Correction[b]	,299	1	,585		
Likelihood Ratio	,427	1	,513		
Fisher's Exact Test				,522	,292
N of Valid Cases	385				
a. 0 cells (0,0%) have expected count less than 5. The minimum expected count is 61,95.					
b. Computed only for a 2x2 table					

Table 5.88 Chi-Square Test of gender effect on weekly number of social travels during the pandemic.

Chi-Square Tests					
	Value	df	Asymp. Sig. (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)
Pearson Chi-Square	,215[a]	1	,643		
Continuity Correction[b]	,064	1	,801		
Likelihood Ratio	,216	1	,642		
Fisher's Exact Test				,678	,403
N of Valid Cases	385				
a. 0 cells (0,0%) have expected count less than 5. The minimum expected count is 11,10.					
b. Computed only for a 2x2 table					

When we look at the result of Chi-Square Test of the gender effect on number of weekly social travels before pandemic, the significance value was found to be 0.513. It means that the gender effect on number of weekly social travels before the pandemic is not significant. However, the gender effect during the pandemic period is not significant with 0,643 significance value in Chi-Square.

5.6.3. Significance of Student/Employee Factor

In this section, we will examine how the student/employee effects on weekly number of social travels by comparing before and during the pandemic. We will first examine which groups prefer which travel mode from crosstab, and then the significance of the factor from the Chi-Square table.

Table 5.89 Crosstab of student/employee effect on weekly number of social travels before the pandemic.

Crosstab					
			BP_soc_week_clus		Total
			[0,1,2,3]	4+	
Stu_Emp	Employee	Count	126	59	185
		% within Stu_Emp	68,1%	31,9%	100,0%
	Student_Employee	Count	29	21	50
		% within Stu_Emp	58,0%	42,0%	100,0%
	Student	Count	96	54	150
		% within Stu_Emp	64,0%	36,0%	100,0%
Total		Count	251	134	385
		% of Total	65,2%	34,8%	100,0%

Table 5.90 Crosstab of student/employee effect on weekly number of social travels during the pandemic.

Crosstab					
			DP_soc_week_clus		Total
			[0,1,2,3]	4+	
Stu_Emp	Employee	Count	177	8	185
		% within Stu_Emp	95,7%	4,3%	100,0%
	Student_Employee	Count	44	6	50
		% within Stu_Emp	88,0%	12,0%	100,0%
	Student	Count	140	10	150
		% within Stu_Emp	93,3%	6,7%	100,0%
Total		Count	361	24	385
		% of Total	93,8%	6,2%	100,0%

When crosstabs are examined, clear differences can be seen between before and during the pandemic period. During the pandemic period, a decrease in number of weekly social travel is observed. If we examine the gender effect on weekly number of social travels: Before the pandemic period, employees and students made similar number of weekly social travels. The student-worker group, on the other hand, made a slightly higher number of weekly social travels compared to the others. During the pandemic period, the student/employee effect is the same before the pandemic period.

Table 5.91 Chi-Square Test of student/employee effect on weekly number of social travels before the pandemic.

Chi-Square Tests			
	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	1,927[a]	2	,382
Likelihood Ratio	1,905	2	,386
N of Valid Cases	385		
a. 0 cells (0,0%) have expected count less than 5. The minimum expected count is 17,40.			

Table 5.92 Chi-Square Test of student/employee effect on weekly number of social travels during the pandemic.

Chi-Square Tests			
	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	4,046[a]	2	,132
Likelihood Ratio	3,606	2	,165
N of Valid Cases	385		
a. 1 cells (16,7%) have expected count less than 5. The minimum expected count is 3,12.			

When we look at the result of Chi-Square Test of the gender effect on number of weekly social travels before pandemic, the significance value was found to be 0.382. It means that the gender effect on number of weekly social travels before the pandemic is not significant. However, the gender effect during the pandemic period is not significant with 0,132 significance value in Chi-Square.

5.6.4. Significance of Education Level Factor

In this section, we will examine how the education level effects on weekly number of social travels by comparing before and during the pandemic. We will first examine which groups prefer which travel mode from crosstab, and then the significance of the factor from the Chi-Square table.

Table 5.93 Crosstab of education level effect on weekly number of social travels before the pandemic.

Crosstab					
			BP_soc_week_clus		Total
			[0,1,2,3]	4+	
Education	Highschool	Count	79	20	99
		% within Education	79,8%	20,2%	100,0%
	Master_ doctorate	Count	33	21	54
		% within Education	61,1%	38,9%	100,0%
	Primary school	Count	30	8	38
		% within Education	78,9%	21,1%	100,0%
	Undgraduate	Count	109	85	194
		% within Education	56,2%	43,8%	100,0%
Total		Count	251	134	385
		% of Total	65,2%	34,8%	100,0%

Table 5.94 Crosstab of education level effect on weekly number of social travels during the pandemic.

Crosstab					
			DP_soc_week_clus		Total
			[0,1,2,3]	4+	
Education	Highschool	Count	99	0	99
		% within Education	100,0%	0,0%	100,0%
	Master_ doctorate	Count	48	6	54
		% within Education	88,9%	11,1%	100,0%
	Primary school	Count	38	0	38
		% within Education	100,0%	0,0%	100,0%
	Undgraduate	Count	176	18	194
		% within Education	90,7%	9,3%	100,0%
Total		Count	361	24	385
		% of Total	93,8%	6,2%	100,0%

When crosstabs are examined, clear differences can be seen between before and during the pandemic period. If we examine the education level effect on weekly number of social travels: Both before the pandemic period and during the pandemic period, undergraduate and master-doctorate education level groups made more weekly social travels than primary school and high school education level groups. During the pandemic period, a decrease in number of weekly social travel is observed.

Table 5.95 Chi-Square Test of education level effect on weekly number of social travels before the pandemic.

Chi-Square Tests			
	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	19,808[a]	3	,000
Likelihood Ratio	20,718	3	,000
N of Valid Cases	385		
Phi	,227		,000
Cramer's V	,227		,000
a. 0 cells (0,0%) have expected count less than 5. The minimum expected count is 13,23.			

Table 5.96 Chi-Square Test of education level effect on weekly number of social travels during the pandemic.

Chi-Square Tests			
	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	14,382[a]	3	,002
Likelihood Ratio	22,142	3	,000
N of Valid Cases	385		
Phi	,193		,002
Cramer's V	,193		,002
a. 2 cells (25,0%) have expected count less than 5. The minimum expected count is 2,37.			

When we look at the result of Chi-Square Test of the education level effect on number of weekly social travels before pandemic, the significance value was found to be 0.000. It means that the education level effect on number of weekly social travels before the pandemic is significant. When we look at the Phi value, we see that the education level factor has a medium effect. However, the education level effect during the pandemic period has no meaningful results, because the cell value is over 20%.

5.6.5. Significance of Private Car Owning Factor

In this section, we will examine how the private car owning effects on weekly number of social travels by comparing before and during the pandemic. We will first examine which groups prefer which travel mode from crosstab, and then the significance of the effect of the factor from the Chi-Square table.

Table 5.97 Crosstab of private car owning effect on weekly number of social travels before the pandemic.

Crosstab					
			BP_soc_week_clus		Total
			1,00	2,00	
Own_privatecar	0	Count	135	76	211
		% within Own_privatecar	64,0%	36,0%	100,0%
	1	Count	116	58	174
		% within Own_privatecar	66,7%	33,3%	100,0%
Total		Count	251	134	385
		% of Total	65,2%	34,8%	100,0%

Table 5.98 Crosstab of private car owning effect on weekly number of social travels during the pandemic.

Crosstab					
			DP_soc_week_clus		Total
			1,00	2,00	
Own_privatecar	0	Count	195	16	211
		% within Own_privatecar	92,4%	7,6%	100,0%
	1	Count	166	8	174
		% within Own_privatecar	95,4%	4,6%	100,0%
Total		Count	361	24	385
		% of Total	93,8%	6,2%	100,0%

When crosstabs are examined, clear differences can be seen between before and during the pandemic period. If we examine the education level effect on weekly number of social travels: Private car ownership does not affect the number of weekly social activities either before or during the pandemic. During the pandemic period, a decrease in number of weekly social travel is observed.

Table 5.99 Chi-Square Test of private car owning effect on weekly number of social travels before the pandemic.

Chi-Square Tests					
	Value	df	Asymp. Sig. (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)
Pearson Chi-Square	,303[a]	1	,582		
Continuity Correction[b]	,196	1	,658		
Likelihood Ratio	,304	1	,582		
Fisher's Exact Test				,593	,329
Linear-by-Linear Association	,302	1	,582		
N of Valid Cases	385				

a. 0 cells (0,0%) have expected count less than 5. The minimum expected count is 60,56.

b. Computed only for a 2x2 table

Table 5.100 Chi-Square Test of private car owning effect on weekly number of social travels during the pandemic.

Chi-Square Tests					
	Value	df	Asymp. Sig. (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)
Pearson Chi-Square	1,454[a]	1	,228		
Continuity Correction[b]	,988	1	,320		
Likelihood Ratio	1,489	1	,222		
Fisher's Exact Test				,291	,160
Linear-by-Linear Association	1,450	1	,229		
N of Valid Cases	385				
a. 0 cells (0,0%) have expected count less than 5. The minimum expected count is 10,85.					
b. Computed only for a 2x2 table					

When we look at the result of Chi-Square Test of the private car owning effect on number of weekly social travels before pandemic, the significance value was found to be 0.582. It means that the private car owning effect on number of weekly social travels before the pandemic is not significant. Also, the private car owning effect during the pandemic period is not significant with 0,228 significance value in Chi-Square.

CHAPTER 6

DISCUSSION

The outcomes of this thesis have provided insight into the effect of the Covid-19 Pandemic on travel preferences and external factors of travel. In this chapter, the results will be discussed and interpreted with caution. The chapter ends with several recommendations for the future research.

This study examines the consequences of the multiple effects of the Covid-19 Pandemic. There can be main factors and external factors that affect the travel preference. The Covid-19 Pandemic has been the factor that has the greatest effect on travel preference, travel factors, and external factors of travel (Figure 6.1).

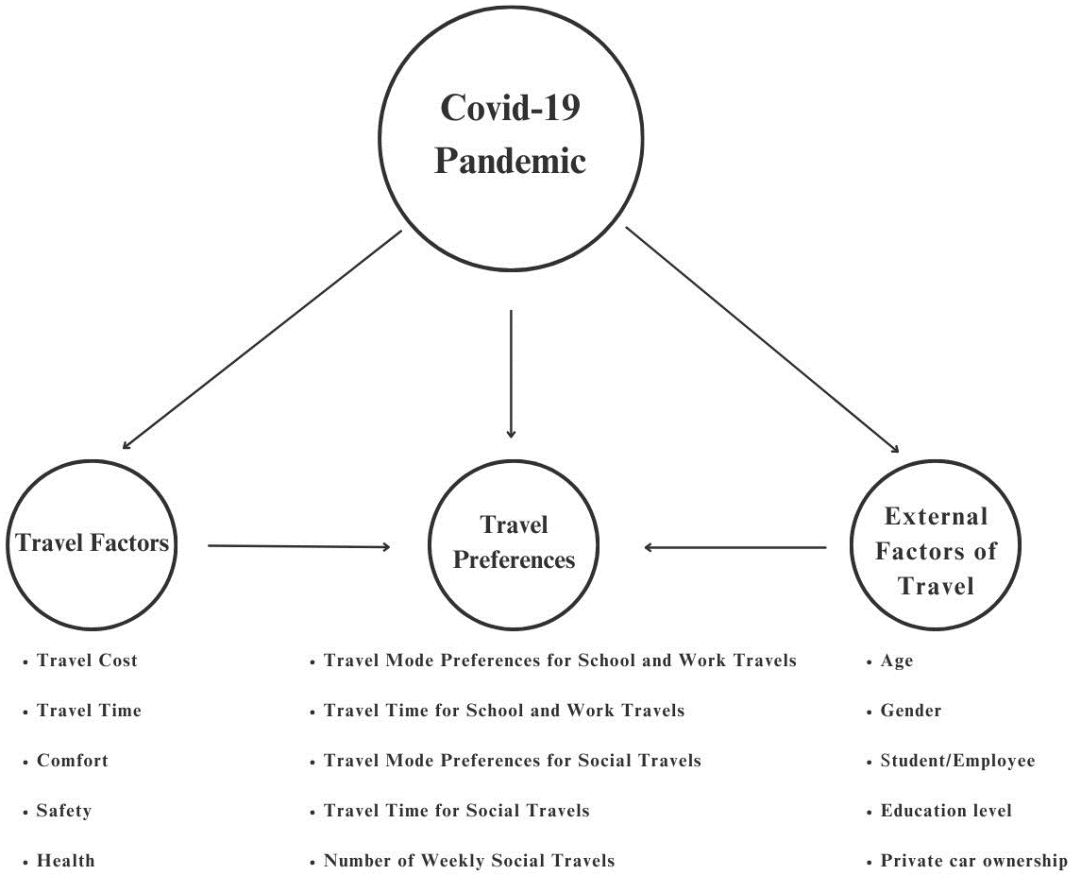

Figure 6.1 Scheme of the Covid-19 Pandemic multiple effect.

First, the results of the change in travel preferences before and during the Covid-19 Pandemic were evaluated (Table 6.1). These analyses seem supporting the main hypothesis of the thesis is that the Covid-19 Pandemic has significantly affected travel preferences of students and employees. The results indicate that the Covid-19 Pandemic changed significantly the travel mode preferences, reduced travel times, and reduced the number of weekly social travels, viz, change happening by the pandemic, being another factor leaving no room for changes happening by chance, or other reasons. The results were analyzed in three kind of samples as total sample, only for students, and only for employees. There is no difference between the results of these three samples. Five main results were evaluated in this section: Travel mode preferences for school and work travels, travel time for school and work travels, travel mode preferences for social travels, travel time for social travels, and number of weekly social travels.

Table 6.1 Summary Table of Pandemic Effects on Travel Preferences.

Summary Table of Pandemic Effect on Travel Preferences		
		Significance Test
School and Work Travels Mode Preferences	Total Sample	✓ Significant
	Student	✓ Significant
	Employee	✓ Significant
School and Work Travels Time	Total Sample	✗ Not Significant
	Student	✗ Not Significant
	Employee	✗ Not Significant
Social Travels Mode Preferences	Total Sample	✓ Significant
	Student	✓ Significant
	Employee	✓ Significant
Social Travels Time	Total Sample	✓ Significant
	Student	✓ Significant
	Employee	✓ Significant
Weekly Number of Social Travel	Total Sample	✓ Significant
	Student	✓ Significant
	Employee	✓ Significant

The Covid-19 Pandemic has made quite a difference in travel mode preferences for school and work travels. One of the most important results of the review on total sample was that people preferred private car rather than public transportation. As result of the McNemar-Bowker Test, this change was found to be significant. However, public transportation is still the most preferred school and work travel mode during the pandemic

period. As an interesting result, there is a minority group who preferred to walk before the pandemic and started using public transportation during the pandemic period. Factors such as changing work-school and changing home may have caused this. When we look at travel time for school and work travels before and during the Covid-19 Pandemic, we see that school and work travel times in general have decreased a little but have not changed much. As a result of the McNemar-Bowker Test, it is seen that this change is not significant. The reason for this is that since work and school travels are compulsory travel types, and people travel the same distance from home to work. Some people reduced their travel times by using private car during the pandemic period.

The Covid-19 Pandemic created a significant change in travel mode preferences for students' and employees' social travel mode preferences. One of the reasons for this difference between before and during the pandemic period is that this is not compulsory travel. Therefore, people can change the travel mode preferences by changing their social travel behaviors. While looking at the total sample result, it is determined that the most important change was the sharp decrease in the preference of public transportation and the large increase in the preference for walking. In the analysis made only on employees' sample, a group that preferred to walking rather than private car during the pandemic period is one of the interesting results. The reason for this may be the preference of avoiding long travels due to economic conditions of the country or social restrictions and health concerns during the pandemic period. Travel time for social travels has been greatly affected by the Covid-19 Pandemic. While looking at the total sample, the average differences in before and during pandemic period social travel time is 22.63 minutes. As a result of the McNemar-Bowker Test, this difference is found to be significant. In general, travel times for social activities have decreased. The reason for this may be the following restrictions applied by the government or fears of catching the pandemic. Students' social travel times decreased more than those of employees. When we examine number of weekly social travels, we see that it has been affected by the Covid-19 Pandemic. It is seen that the average number of travels decreased by 1.88 in total sample analysis and this difference is found to be in the McNemar-Bowker Test. The reason for the decrease in the number of weekly social travels may be the social restrictions and health concerns experienced during the pandemic period, as in other analyzes.

Secondly, the results of the main travel factors and external factors on travel preferences were evaluated by comparing the before and during the pandemic periods (Table 6.2). This analysis supports the sub-hypothesis of the thesis is that with Covid-19

Pandemic, there have been significant changes in the travel factor of employees and students. The data suggest that while the most effective main travel factors on travel preferences before the pandemic were cost and travel time, health became the most important factor during the pandemic period. It is seen that the Covid-19 Pandemic has a large effect on the importance of other factors. External factors of travels were examined with the scoring system. As a conclusion, the most effective factors are education level (18) and private car owning (18), followed by age group (14). Gender factor (7) and student/employee (6) factor have the least effect. Social travels mode preferences were the most affected by external factors.

Table 6.2 Summary table of factors on travel preferences.

Summary Table of Factors on Travel Preferences				
	Significance Test		**Strength of Effect Test**	
	Before the Pandemic	During the Pandemic	Before the Pandemic	During the Pandemic
School and Work Travels Mode Preferences				
Age Group Factor	No information	Not significant ✗	No information (0)	No effect (0)
Gender Factor	Not significant ✗	Significant ✓	No effect (0)	Medium effect (2)
Student/Employee Factor	Significant ✓	Significant ✓	Medium effect (2)	Weak effect (1)
Education Level Factor	Not significant ✗	Significant ✓	No effect	Medium effect (2)
Private Car Owning Factor	Significant ✓	Significant ✓	Strong effect (3)	Very strong effect (4)
School and Work Travels Time				
Age Group Factor	Significant ✓	Significant ✓	Medium effect (2)	Medium effect (2)
Gender Factor	Not significant ✗	Not significant ✗	No effect (0)	No effect (0)
Student/Employee Factor	Not significant ✗	Not significant ✗	No effect (0)	No effect (0)
Education Level Factor	Significant ✓	Significant ✓	Strong effect (3)	Medium effect (2)
Private Car Owning Factor	Not significant ✗	Significant ✓	No effect (0)	Weak effect (1)
Social Travels Mode Preferences				
Age Group Factor	Significant ✓	Significant ✓	Strong effect (3)	Medium effect (2)
Gender Factor	Significant ✓	Significant ✓	Weak effect (1)	Medium effect (2)

(Cont. on the next page)

(Table 6.2. Cont.)

Student/Employee Factor	**Significant** ✓	**Not significant** ✗	**Strong effect (3)**	**No effect (0)**
Education Level Factor	Significant ✓	Significant ✓	Strong effect (3)	Strong effect (3)
Private Car Owning Factor	Significant ✓	Significant ✓	Very strong effect (4)	Very strong effect (4)
Social Travels Time				
Age Group Factor	Significant ✓	Significant ✓	Medium effect (2)	Medium effect (2)
Gender Factor	Significant ✓	Significant ✓	Weak effect (1)	Weak effect (1)
Student/Employee Factor	Not significant ✗	Not significant ✗	No effect (0)	No effect (0)
Education Level Factor	Not significant ✗	Significant ✓	No effect (0)	Strong effect (3)
Private Car Owning Factor	Significant ✓	Not significant ✗	Medium effect (2)	No effect (0)
Weekly Number of Social Travel				
Age Group Factor	Significant ✓	No information	Weak effect (1)	No information (0)
Gender Factor	Not significant ✗	Not significant ✗	No effect (0)	No effect (0)
Student/Employee Factor	Not significant ✗	Not significant ✗	No effect (0)	No effect (0)
Education Level Factor	Significant ✓	No information	Medium effect (2)	No information (0)
Private Car Owning Factor	Not significant ✗	Not significant ✗	No effect (0)	No effect (0)

(No effect=0, weak effect=1, medium effect=2, strong effect=3, very strong effect=4).

While student/employee and private car ownership effect on school and work travel mode preferences before the pandemic, gender and education levels also started to affect during the pandemic, the effect of student/employee decreased, and the effect of private car ownership increased. It can be said that the mode preferences of women and men, as well as people with different education levels, differed in school and work travel before the pandemic. While age and education level effect on school and work travel time before the pandemic, private car ownership also started to affect it during the pandemic, and the effect of education level decreased. Some private car owners preferred different travel mode before the pandemic, but they decreased the school and work travel time by using their private cars for health reasons during the pandemic period. Before the pandemic, all factors except gender had a strong effect on social travel mode preferences.

During the pandemic, while the effect of age and student/employee decreased, the effect gender increased. It is an interesting result that the pandemic brought the gender factor to the fore in social travel mode preferences. Before the pandemic, age, gender, and private car ownership were affecting social travel time. During the pandemic, the education level started to take effect, but private car ownership lost its effect. Gender had little effect, and there was no difference in this travel behavior between men and women. It has been observed that people with different education levels had different behaviors, but this cannot be generalized as an increase or decrease in education level. Private car owners were expected to take longer social travels than others during the pandemic, but the health threat posed by Covid-19 was seen to be more dominant. While the Weekly Number of Social Travel was affected only by age and education level before the pandemic, it was only affected by the Covid-19 Pandemic during the pandemic. The reason for this is that people leave the differences in their transportation behaviors and reduce the number of social travels for their life safety.

There are two hypotheses in this research:

1) The main hypothesis of the thesis is that the Covid-19 Pandemic has significantly affected travel preferences of students and employees.

2) Sub-hypothesis of the thesis is that the Covid-19 Pandemic influenced significant changes from over the travel factors of employees and students.

The results of the thesis prove the correctness of first hypothesis. In line with the first hypothesis, the change in school/work and social travel mode preference is significant before and during the Covid-19 Pandemic. In addition, the change in school and work travel time before and during the Covid-19 Pandemic is not significant, but the change in social travel time, and weekly number of social travels before and during the Covid-19 Pandemic is significant. Since social travel is an optional travel type, during the pandemic period, people reduced the number of weekly travels, reduced the travel time, and preferred more walking as a travel mode. As a significant change in school and work travels mode preferences, they preferred more private cars, but the change in school and work travel times is not significant since the locations of work and schools are not changeable, except for the periods when home-office work and online education. The results of the thesis prove the partial truth of the second hypothesis. In line with the second hypothesis, there are some significant changes in travel factors before and during the Covid-19 Pandemic. In the comparison of factor analyzes before and during the

pandemic, significant change was observed in 11 of 25 analyzes, no significant change was observed in 11, and methodological problems were found in 3 of them.

CHAPTER 7

CONCLUSION AND RECOMMENDATIONS

In this section, we will summarize the findings by evaluating the research questions of the thesis. This study focuses on how the Covid-19 Pandemic effects on travel preferences and how external factors of travel preference are affected by the Covid-19 Pandemic. In this context, three research questions will be answered: 1) Was the change caused by the Covid-19 Pandemic in travel mode preferences significant? 2) Which factors has significant effect on travel mode preferences before and during the pandemic? 3) How strong were the effects of these factors?

The study began with an extensive literature review on travel preference. Since students and employees had compulsory travel, they were determined as the target group. Fahrettin Altay, Konak Pier, and Halkapınar Transfer Centers were determined as study sites. 385 questionnaires were conducted on travel preferences at 3 transfer centers.

The first analysis showed the Covid-19 Pandemic had significant effects on travel preferences. Findings showed that the home-based work travel preference was less flexible than the home-based social travel preference. People want to minimize the travel cost in home-based work travel because these travels are made every day, the travel time is not changeable because the travel distance does not change, and the inability to give up working even during the Covid-19 Pandemic. On the other hand, people's travel behavior on social travels changed more radically during the pandemic, as social travels are arbitrary travels.

The second analysis showed that the strength of some external factors on travel preferences changed during the pandemic. This change is since the effect of the Covid-19 Pandemic is very dominant. Social travels mode preferences were the most affected by external factors. Before the pandemic the strongest external factor on the travel preference was private car ownership, and the weakest external factor was gender. During the pandemic the strongest external factor on the travel preference was education level, and the weakest external factor was education level. With the pandemic effect, the total strength of age, student/employee factors decreased, and the total strength of gender and education level factors increased.

During the Covid-19 Pandemic, people preferred individual travel modes such as private car and walking. Those who did not own a private car and whose workplace was not within walking distance were forced to use public transportation. In this context, scooter-bike paths and parks should be increased to encourage the use of scooters and bicycles in urban transport networks. According to the number of floors specified in the planned areas building bylaws, road widths should be calculated by considering bicycle and scooter paths in dense urban areas. As the use of private cars will increase, the importance of car park is also increasing. Also, since people cannot give up and have to use public transportation even in the Pandemic, public transportation systems should be designed to meet individual needs and meet comfort and hygiene conditions.

On the other hand, it was seen that the pandemic spread faster in dense urban areas, as we saw during the pandemic period. Therefore, the infrastructure of the region and pandemic conditions should be considered when making density decisions. During the pandemic period, the urban area must have good natural ventilation so that people can walk without being infected. Therefore, in dense urban areas, block buildings with a garden may be preferred instead of attached buildings. In this context, it is necessary to abandon parcel and block-based urban transformation projects and make regional projects. Vertical architecture increases people's use of common space. Therefore, horizontal architecture can be considered as a solution to reduce the risk of transmission of pathogens in the city periphery (figure 7.1). During the pandemic, access to services, especially health, is easier in urban areas than in rural areas (Litman, 2020). Therefore, cities should be planned in a typology to reduce transmission of pathogens risk.

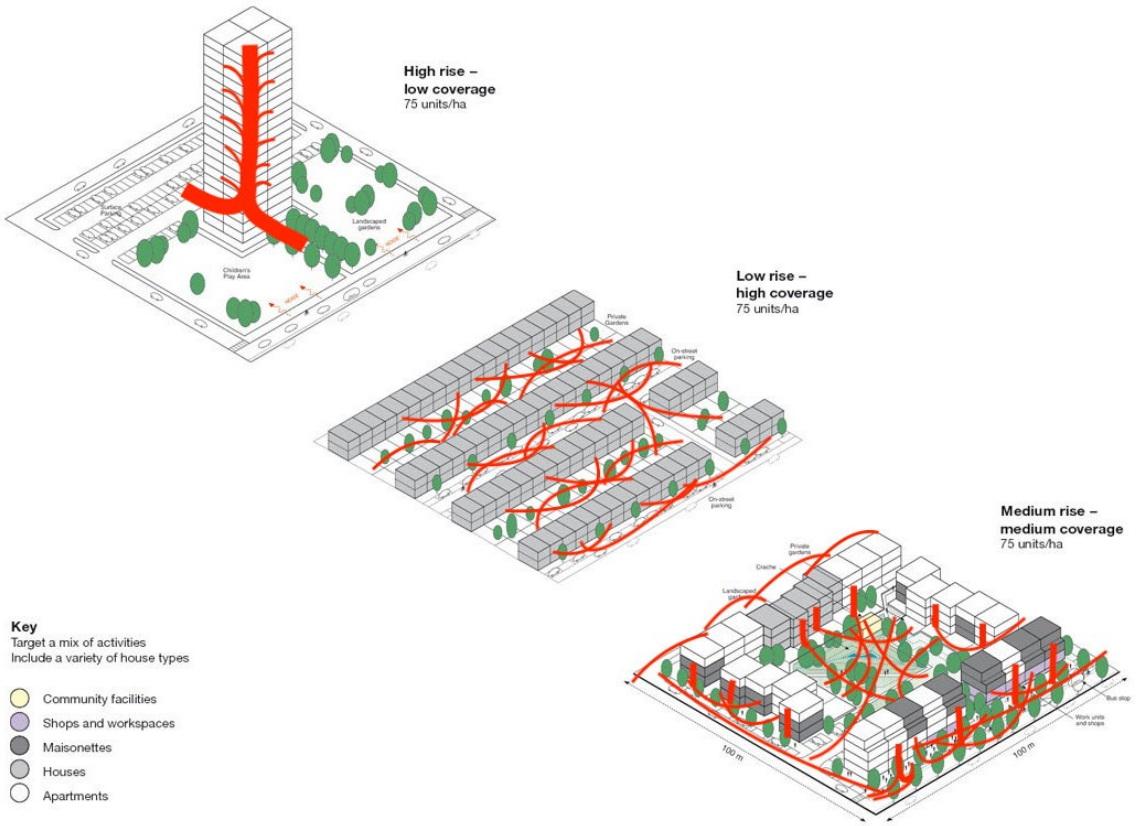

Figure 7.1 Usage density of common areas according to building type.
(John et al., 2015; Litman, 2020)

Finally, this study discussed the Covid-19 Pandemic effect on travel preference in two groups, students, and employees. Due to physical and methodological limitations in the analyses, the study could not examine to all social groups and everyday life. Researching Covid-19 Pandemic effect on everyday life of different social groups will deepen the study. This study contributes to transportation planning and policies by providing a basis for analysis by explaining that travel preferences are significantly affected by the Covid-19 Pandemic. It also sheds light on future research on travel preferences.

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APPENDIX A

QUESTIONNAIRE

İZMİR AKTARMA MERKEZLERİ ULAŞIM ANKETİ

İzmir Yüksek Teknoloji Enstitüsü

Tarih:..../..../..... Anketör İsmi:..... Cep Telefonu:.....

Anket No:..... Anket Konumu:..... E-posta:.....

Elde edilecek kişisel bilgiler tamamen gizli tutulacak olup, anket sonuçlarından derlenecek istatistiki bilgiler proje sonuçlarının değerlendirileceği raporlarda ve bilimsel yayınlarda kullanılacaktır.

Genel Bilgiler

1. Kaç yaşındasınız?
.....

2. Cinsiyetiniz?
☐ Kadın
☐ Erkek

3. Öğrenci misiniz? / Çalışıyor musunuz?
☐ Öğrenciyim
☐ Çalışıyorum

4. Eğitim Durumunuz nedir?
☐ Okuma-yazma yok ☐ İlkokul ☐ Lise
☐ Lisans ☐ Yüksek Lisans ☐ Doktora

5. Nerede oturuyorsunuz ?
(Mahalle/İlçe) .....

6. Pandemiden önce ve pandemi dönemindeki aylık gelir farkınız ne kadar?
.....

Ulaşım Davranışları

7. Mevcut toplu taşıma sisteminden memnun musunuz?
☐ Memnunum ☐ Memnun Değilim

8. Aracınız var mı?
☐ Yok ☐ Bisiklet, Scooter ☐ Motorsiklet
☐ Araba ☐ Diğer (Dolmuş, Otobüs, Tır,vb)

9. Araç Ehliyetiniz var mı?
☐ Var ☐ Yok

10. Toplu taşıma durağına kaç dakikalık yürüme mesafesinde oturuyorsunuz?
☐ 0-5dk ☐ 5-10dk ☐ 10-15dk ☐ 15dk+

11. Genelde hangi zaman aralıklarında yolculuk yapıyorsunuz?
☐ 05.00-09.00 ☐ 09.00-13.00 ☐ 13.00-17.00
☐ 17.00-21.00 ☐ 21.00-05.00

Pandemi Öncesi Dönem ve Pandemi Dönemi Kentsel Yolculuk Davranışları

12. Pandemiden önce ulaşım türü (Yaya, kişisel araç, toplu taşıma) tercihlerinizdeki en önemli faktör ne oldu?
☐ Güvenlik ☐ Sağlık ☐ Maliyet ☐ Süre ☐ Konfor

13. Pandemiden döneminde ulaşım türü (Yaya, kişisel araç, toplu taşıma) tercihlerinizdeki en önemli faktör neydi?
☐ Güvenlik ☐ Sağlık ☐ Maliyet ☐ Süre ☐ Konfor

14. Pandemi gündelik hayatınızı ne kadar etkiledi?
☐ Hiç ☐ Hafif ☐ Orta
☐ Fazla ☐ Çok Fazla

İletişim: Muzaffer Arda Yüksel 05051567702
m.ardayuksell@gmail.com

İZMİR AKTARMA MERKEZLERİ ULAŞIM ANKETİ

İzmir Yüksek Teknoloji Enstitüsü

Pandemi Öncesi Dönem ve Pandemi Dönemi Kentsel Yolculuk Davranışları

15. Pandemiden önce okula/işe kaç dakikada ulaşıyordunuz? Hangi ulaşım aracını tercih ediyordunuz?

☐ Yürüme:

☐ Bisiklet, Scooter:

☐ Özel araç:

☐ Toplu taşıma:

16. Pandemi döneminde okula/işe kaç dakikada ulaşıyordunuz? Hangi ulaşım aracını tercih ediyordunuz?

☐ Yürüme:

☐ Bisiklet, Scooter:

☐ Özel araç:

☐ Toplu taşıma:

17. Pandemi döneminde Sosyal/Rekreasyonel faaliyetler için ne kadar süre ve haftada kaç kez yolculuk yapıyordunuz? Hangi ulaşım aracını tercih ediyordunuz?

☐ Yürüme:

☐ Bisiklet, Scooter:

☐ Özel araç:

☐ Toplu taşıma:

18. Pandemiden önce Sosyal/Rekreasyonel faaliyetler için ne kadar süre ve haftada kaç kez yolculuk yapıyordunuz? Hangi ulaşım aracını tercih ediyordunuz?

☐ Yürüme:

☐ Bisiklet, Scooter:

☐ Özel araç:

☐ Toplu taşıma:

19.Pandemi döneminde kullandığınız ulaşım türlerini yolculukta kendinizi ne kadar rahat/huzurlu/güvende hissetiğinize göre 1'den 4'e sıralayınız.

(En rahat: 1, En az rahat:4)

☐ Yürüme:

☐ Bisiklet, Scooter:

☐ Özel araç:

☐ Toplu taşıma:

20.Pandemiden önce kullandığınız ulaşım türlerini yolculukta kendinizi ne kadar rahat/huzurlu/güvende hissetiğinize göre 1'den 4'e sıralayınız.

(En rahat: 1, En az rahat:4)

☐ Yürüme:

☐ Bisiklet, Scooter:

☐ Özel araç:

☐ Toplu taşıma:

21.Pandemiden önce, kullandığınız ulaşım aracı tercih ettiğiniz ulaşım aracı mıydı? Değilse, o aracı kullanma nedeniniz neydi?

☐ Evet ☐ Hayır:

- ☐ Güvenlik
- ☐ Sağlık
- ☐ Maliyet
- ☐ Süre
- ☐ Konfor

22.Pandemi döneminde, kullandığınız ulaşım aracı tercih ettiğiniz ulaşım aracı mıydı? Değilse, o aracı kullanma nedeniniz neydi?

☐ Evet ☐ Hayır:

- ☐ Güvenlik
- ☐ Sağlık
- ☐ Maliyet
- ☐ Süre
- ☐ Konfor

23. Pandemi döneminde evden çalıştınız mı?

☐ Evet ☐ Hayır

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APPENDIX B

RESEARCH ETHICS COMMITTEE APPROVAL

Evrak Tarih ve Sayısı: 04.11.2022-E.107650

GİZLİ

İZMİR YÜKSEK TEKNOLOJİ ENSTİTÜSÜ
SOSYAL VE BEŞERİ BİLİMLER
BİLİMSEL ARAŞTIRMA VE YAYIN ETİK KURULU

DEĞERLENDİRME FORMU

Çalışmanın Başlığı:
Pandemi Döneminde Ulaşım Tercihlerine Etki Eden Faktörler
Sorumlu Araştırmacının Adı Soyadı:
Prof. Dr. Yavuz DUVARCI
Karar Tarihi:
02.11.2022

ETİK KURUL DEĞERLENDİRME SONUCU

✓ **Kabul**
☐ **Düzeltme Gerekli**
Düzeltmeler hakkındaki görüş, tavsiye
☐ **Ret**
Ret ile ilgili gerekçe, görüş, tavsiye

BAŞKAN

Prof. Dr. İpek AKPINAR AKSUGÜR

ÜYE	**ÜYE**	**ÜYE**
Prof. Dr. Ela ÇİL	Prof. Dr. Bünyamin AKGÜL	Prof. Dr. Koray VELİBEYOĞLU
ÜYE	**ÜYE**	**ÜYE** (KATILMADI)
Prof. Dr. Mustafa Emre İLAL	Prof. Dr. Hülya YÜCEER	Prof. Dr. Fehmi DOĞAN

Bu belge, güvenli elektronik imza ile imzalanmıştır.Evrak sorgulaması https://turkiye.gov.tr/ebd?eK=5030&eD=BSC4KZJ0K3&eS=107650 adresinden yapılabilir.

GİZLİ

APPENDIX C

RAW DATA

Table C.1 Raw data part 1.

Survey No	1) Age	2) Gender	3) Student/ Employee	4) Education	5) Residence	6) Monthly Income Difference (TL)	7) Public Transportation Satisfaction	8) Bicycle Ownership	9) Private Car Ownership	10) Motorcycle Ownership	11) Driving License Ownership	12) Home-Stop Walking Distance (min)	13) Travel Time Period (1)	14) Travel Time Period (2)
1	21	Female	Student	Undgra	Konak	600	0	1	0	0	1	4	05.00-09.00	17.00-21.00
2	46	Male	Employee	Highsc	Balçova		1	0	0	0	1	12	05.00-09.00	17.00-21.00
3	24	Female	Stu_Emp	Undgra	Güzelbahçe	1750	0	0	1	0	1	8	05.00-09.00	21.00-05.00
4	43	Male	Employee	Highsc	Balçova		1	0	1	0	1	8	09.00-13.00	21.00-05.00
5	26	Female	Student	Master	Buca	0	1	0	1	0	1	4	05.00-09.00	13.00-17.00
6	56	Female	Employee	Highsc	Buca		1	0	1	0	1	8	05.00-09.00	17.00-21.00
7	26	Male	Employee	Undgra	Karabağlar	4000	1	0	0	1	1	4	05.00-09.00	17.00-21.00
8	44	Female	Employee	Docdeg	Konak	7000	0	0	1	0	1	20	05.00-09.00	13.00-17.00

(Cont. on the next page)

(Table C.1 Cont.)

9	21	Female	Student	Undgra	Urla	750	0	0	0	0	1	8	09.00-13.00	13.00-17.00
10	26	Female	Stu_Emp	Master	Balçova	1000	0	0	0	0	1	4	09.00-13.00	17.00-21.00
11	23	Female	Student	Undgra	Güzelbahçe	600	1	0	1	0	1	8	13.00-17.00	09.00-13.00
12	29	Male	Stu_Emp	Master	Buca	2000	0	0	0	0	1	8	05.00-09.00	17.00-21.00
13	23	Male	Student	Undgra	Urla	0	1	1	0	0	1	4	09.00-13.00	13.00-17.00
14	31	Male	Stu_Emp	Docdeg	Buca	4000	0	0	1	0	1	4	05.00-09.00	17.00-21.00
15	23	Male	Student	Undgra	Karşıyaka	1500	0	0	0	0	1	8	09.00-13.00	13.00-17.00
16	33	Male	Stu_Emp	Docdeg	Buca	7000	0	0	1	0	1	8	09.00-13.00	17.00-21.00
17	21	Female	Student	Undgra	Göztepe	0	0	1	0	0	0	12	05.00-09.00	17.00-21.00
18	27	Female	Stu_Emp	Master	Buca	5000	0	0	1	0	1	4	05.00-09.00	17.00-21.00
19	25	Female	Student	Undgra	Balçova	0	1	0	0	0	0	4	05.00-09.00	13.00-17.00
20	35	Male	Employee	Highsc	Konak		1	0	0	0	1	20	05.00-09.00	17.00-21.00
21	23	Male	Stu_Emp	Undgra	Gaziemir	1200	1	0	0	0	1	8	09.00-13.00	13.00-17.00
22	38	Male	Employee	Highsc	Balçova	2000	1	0	1	0	1	4	05.00-09.00	17.00-21.00
23	28	Female	Student	Master	Bornova	1800	1	0	0	0	1	8	09.00-13.00	17.00-21.00

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(Table C.1 Cont.)

24	38	Male	Employee	Highsc	Karşıyaka		1	0	0	0	1	4	05.00-09.00	17.00-21.00
25	21	Male	Student	Undgra	Bornova	2500	0	0	0	0	0	4	09.00-13.00	17.00-21.00
26	54	Male	Employee	Primary	Bayraklı	3000	0	0	1	0	1	4	09.00-13.00	17.00-21.00
27	20	Male	Student	Undgra	Karşıyaka		1	0	0	0	0	8	13.00-17.00	17.00-21.00
28	50	Male	Employee	Primary	Konak	2500	0	0	1	0	1	4	05.00-09.00	17.00-21.00
29	20	Female	Student	Undgra	Bornova	850	1	0	0	0	0	8	09.00-13.00	13.00-17.00
30	40	Male	Employee	Primary	Buca	2000	0	0	0	0	1	4	05.00-09.00	17.00-21.00
31	20	Female	Student	Undgra	Bornova	1500	1	0	0	0	0	12	09.00-13.00	17.00-21.00
32	43	Female	Employee	Highsc	Balçova	5000	1	0	1	0	1	4	05.00-09.00	17.00-21.00
33	19	Female	Student	Undgra	-		1	0	0	0	0	8	09.00-13.00	13.00-17.00
34	59	Male	Employee	Highsc	Bayraklı	2000	0	0	1	0	1	8	05.00-09.00	17.00-21.00
35	18	Female	Student	Undgra	-		1	0	0	0	0	8	09.00-13.00	13.00-17.00
36	63	Male	Employee	Highsc	Karşıyaka	3000	1	0	1	0	1	4	05.00-09.00	17.00-21.00
37	21	Female	Student	Undgra	Bornova		0	0	0	0	1	8	09.00-13.00	17.00-21.00
38	57	Male	Employee	Highsc	Konak		0	0	0	0	1	4	05.00-09.00	17.00-21.00

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(Table C.1 Cont.)

39	20	Female	Student	Undgra	Bayraklı	800	1	0	0	0	1	8	09.00-13.00	13.00-17.00
40	39	Male	Employee	Primary	Bayraklı	-4000	1	0	1	0	1	4	05.00-09.00	17.00-21.00
41	21	Female	Student	Undgra	Urla		0	0	1	0	1	4	05.00-09.00	17.00-21.00
42	43	Male	Employee	Highsc	Konak	0	0	0	0	0	1	20	05.00-09.00	17.00-21.00
43	20	Female	Student	Undgra	Buca	1000	0	0	0	0	0	20	09.00-13.00	13.00-17.00
44	46	Female	Employee	Highsc	Karşıyaka	4000	0	1	1	0	1	4	09.00-13.00	17.00-21.00
45	20	Male	Student	Undgra	Konak	-500	0	0	0	0	1	20	13.00-17.00	21.00-05.00
46	44	Male	Employee	Highsc	Karşıyaka	6000	0	0	1	0	1	8	05.00-09.00	17.00-21.00
47	18	Female	Student	Highsc	Buca	0	0	0	0	0	0	8	05.00-09.00	13.00-17.00
48	55	Male	Employee	Primary	Buca	3000	0	0	1	0	1	4	05.00-09.00	17.00-21.00
49	20	Female	Student	Undgra	Konak	0	1	0	1	0	0	4	09.00-13.00	17.00-21.00
50	46	Male	Employee	Primary	Konak	3000	1	0	1	0	1	4	05.00-09.00	17.00-21.00
51	21	Female	Student	Undgra	Urla	500	1	0	0	0	1	4	09.00-13.00	13.00-17.00
52	39	Male	Employee	Highsc	Buca	2500	0	0	0	0	0	8	05.00-09.00	17.00-21.00
53	21	Female	Student	Undgra	Konak	300	1	0	0	0	0	4	05.00-09.00	17.00-21.00

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(Table C.1 Cont.)

54	35	Female	Employee	Highsc	Bostanlı	5000	1	0	1	0	0	4	05.00-09.00	17.00-21.00
55	26	Male	Student	Undgra	Göztepe	2500	1	0	0	0	1	4	17.00-21.00	21.00-05.00
56	31	Female	Employee	Highsc	Bayraklı	2000	0	0	0	0	1	4	05.00-09.00	17.00-21.00
57	25	Male	Stu_Emp	Master	Karşıyaka	6000	1	1	0	0	1	4	05.00-09.00	17.00-21.00
58	11	Female	Student	Primary	Balçova	100	0	1	1	0	0	8	05.00-09.00	13.00-17.00
59	24	Female	Stu_Emp	Undgra	Karabağlar	2500	1	0	0	0	1	8	05.00-09.00	17.00-21.00
60	11	Male	Student	Primary	Balçova	400	1	0	1	0	0	4	05.00-09.00	13.00-17.00
61	27	Female	Student	Master	Urla	1500	1	0	0	0	0	8	09.00-13.00	13.00-17.00
62	13	Female	Student	Primary	Konak	300	1	1	1	0	0	8	05.00-09.00	13.00-17.00
63	28	Male	Stu_Emp	Master	Karabağlar	8000	1	0	1	0	1	4	05.00-09.00	17.00-21.00
64	13	Female	Student	Primary	Konak	200	0	0	0	0	0	4	05.00-09.00	13.00-17.00
65	22	Male	Student	Undgra	Gaziemir		1	0	0	0	1	4	09.00-13.00	17.00-21.00
66	14	Male	Student	Primary	Gaziemir	300	1	1	0	0	0	4	05.00-09.00	13.00-17.00
67	25	Female	Employee	Master	Konak	3000	0	0	1	0	1	8	09.00-13.00	17.00-21.00
68	14	Male	Student	Primary	Gaziemir	400	1	1	0	0	0	4	05.00-09.00	13.00-17.00

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(Table C.1 Cont.)

69	32	Female	Stu_Emp	Master	Konak	2000	1	0	0	0	1	8	05.00-09.00	17.00-21.00
70	17	Male	Student	Highsc	Bornova	400	1	1	0	0	0	8	05.00-09.00	13.00-17.00
71	56	Female	Employee	Undgra	Konak	4500	1	0	1	0	1	4	13.00-17.00	17.00-21.00
72	17	Female	Student	Highsc	Bornova	500	0	0	1	0	0	4	05.00-09.00	13.00-17.00
73	45	Female	Employee	Undgra	Konak	6000	1	0	1	0	1	4	13.00-17.00	17.00-21.00
74	17	Male	Student	Highsc	Bornova	400	1	1	0	0	0	4	05.00-09.00	13.00-17.00
75	55	Female	Employee	Undgra	Konak	3000	1	0	1	0	1	4	13.00-17.00	21.00-05.00
76	12	Male	Student	Primary	Bayraklı	300	1	1	1	0	0	4	05.00-09.00	13.00-17.00
77	44	Female	Employee	Undgra	Bornova	2500	1	0	0	0	0	12	09.00-13.00	13.00-17.00
78	13	Male	Student	Primary	Bayraklı	200	0	1	1	0	0	4	05.00-09.00	13.00-17.00
79	31	Male	Stu_Emp	Master	Konak	5000	0	0	1	0	1	4	13.00-17.00	21.00-05.00
80	18	Male	Student	Highsc	Bayraklı	400	0	1	1	0	0	8	05.00-09.00	13.00-17.00
81	52	Female	Employee	Undgra	Karabağlar	4000	1	0	1	0	0	4	09.00-13.00	
82	16	Female	Student	Highsc	Konak	300	0	1	0	0	0	8	05.00-09.00	13.00-17.00
83	42	Female	Employee	Undgra	Buca	2500	1	0	1	0	1	4	13.00-17.00	17.00-21.00

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(Table C.1 Cont.)

84	13	Female	Student	Primary	Konak	200	1	1	1	0	0	4	05.00-09.00	13.00-17.00
85	27	Male	Employee	Master	Konak	300	0	0	0	0	1	8	05.00-09.00	17.00-21.00
86	22	Female	Student	Undgra	Faltay	500	1	0	0	0	1	4	05.00-09.00	17.00-21.00
87	30	Male	Employee	Undgra	Konak	15000	1	0	1	0	1	4	05.00-09.00	17.00-21.00
88	23	Male	Student	Master	Faltay	1000	0	0	1	0	1	4	05.00-09.00	17.00-21.00
89	30	Male	Employee	Undgra	Bornova	500	1	0	1	0	1	4	05.00-09.00	17.00-21.00
90	22	Female	Student	Undgra	Konak	400	1	1	1	0	1	4	05.00-09.00	17.00-21.00
91	46	Female	Employee	Undgra	Buca	0	0	0	0	0	1	12	05.00-09.00	17.00-21.00
92	41	Male	Employee	Highsc	Karabağlar		1	0	0	0	1	8	05.00-09.00	17.00-21.00
93	18	Male	Student	Undgra	Karşıyaka		1	0	0	0	0	8	09.00-13.00	17.00-21.00
94	46	Male	Employee	Highsc	Kemalpaşa	2000	1	0	1	0	1	4	05.00-09.00	17.00-21.00
95	29	Male	Employee	Master	Bayraklı	6500	1	1	0	1	1	4	05.00-09.00	17.00-21.00
96	23	Male	Student	Undgra	Narlıdere	3500	1	0	0	0	1	4	05.00-09.00	17.00-21.00
97	25	Female	Stu_Emp	Master	Buca	0	0	1	0	0	0	4	05.00-09.00	17.00-21.00
98	37	Male	Employee	Highsc	Karabağlar		0	0	0	0	1	4	05.00-09.00	17.00-21.00

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(Table C.1 Cont.)

99	25	Female	Student	Undgra	Karabağlar	0	0	0	0	0	0	4	05.00-09.00	17.00-21.00
100	25	Female	Stu_Emp	Undgra	Bornova	-1000	1	0	0	0	0	8	09.00-13.00	13.00-17.00
101	25	Male	Employee	Undgra	Karşıyaka	1000	1	0	0	0	0	4	09.00-13.00	13.00-17.00
102	37	Male	Employee	Highsc	Narlıdere		1	0	1	0	1	4	13.00-17.00	
103	29	Male	Employee	Undgra	Buca	7000	0	0	1	0	1	4	17.00-21.00	21.00-05.00
104	11	Male	Student	Primary	Bayraklı	300	1	0	1	0	0	8	05.00-09.00	13.00-17.00
105	24	Female	Employee	Undgra	Balçova	11000	0	0	0	0	1	8	13.00-17.00	21.00-05.00
106	21	Male	Stu_Emp	Undgra	Bornova	5000	1	0	1	0	1	4	05.00-09.00	17.00-21.00
107	24	Male	Employee	Undgra	Bornova	0	1	0	0	0	1	4		17.00-21.00
108	21	Male	Student	Undgra	Balçova	600	1	0	0	0	0	20	05.00-09.00	
109	27	Male	Student	Master	Karabağlar	4500	1	0	0	0	1	4	13.00-17.00	
110	25	Female	Employee	Undgra	Bornova	2000	0	0	1	0	1	8	05.00-09.00	17.00-21.00
111	48	Female	Employee	Undgra	Gaziemir	3000	1	0	0	0	0	8	09.00-13.00	17.00-21.00
112	36	Male	Employee	Undgra	Buca	3000	0	0	0	0	1	4	09.00-13.00	17.00-21.00
113	26	Female	Stu_Emp	Master	Gaziemir	1000	1	0	1	0	1	4		17.00-21.00

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(Table C.1 Cont.)

114	19	Male	Student	Undgra	-	1500	1	0	0	0	0	4	05.00-09.00	17.00-21.00
115	26	Male	Employee	Undgra	-	8000	1	0	1	0	1	8		17.00-21.00
116	19	Male	Stu_Emp	Highsc	Narlıdere	5000	0	0	1	0	0	4	05.00-09.00	13.00-17.00
117	26	Female	Stu_Emp	Master	Konak		1	0	0	0	1	4	09.00-13.00	17.00-21.00
118	50	Male	Employee	Highsc	Balçova	2000	1	0	0	0	1	4	09.00-13.00	17.00-21.00
119	26	Female	Employee	Undgra	Bayraklı	9000	0	0	0	0	1	4	05.00-09.00	17.00-21.00
120	19	Male	Student	Highsc	Üçyol	800	1	1	0	0	0	8	13.00-17.00	21.00-05.00
121	25	Female	Employee	Undgra	Mavişehir	1000	0	0	1	0	1	4	05.00-09.00	17.00-21.00
122	17	Female	Student	Highsc	Balçova	300	0	0	1	0	1	8	09.00-13.00	13.00-17.00
123	28	Female	Employee	Undgra	Karabağlar	500	1	0	1	0	1	4	13.00-17.00	
124	23	Male	Student	Undgra	Buca	600	0	0	0	0	0	20	05.00-09.00	17.00-21.00
125	21	Female	Student	Undgra	Aliağa	200	1	0	0	0	0	4	13.00-17.00	17.00-21.00
126	26	Female	Employee	Highsc	Buca	2000	0	0	0	0	0	8	05.00-09.00	17.00-21.00
127	23	Female	Employee	Undgra	Çiğli	500	1	0	1	0	1	4	17.00-21.00	21.00-05.00
128	23	Female	Stu_Emp	Master	Karabağlar		1	1	0	0	0	8	05.00-09.00	13.00-17.00

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(Table C.1 Cont.)

129	25	Male	Employee	Undgra	Karabağlar	300	0	0	1	0	1	8	17.00-21.00	
130	36	Female	Employee	Highsc	Gaziemir	2000	0	0	0	0	0	8	05.00-09.00	17.00-21.00
131	24	Female	Student	Master	Karabağlar		1	0	1	0	1	4	09.00-13.00	13.00-17.00
132	41	Male	Employee	Undgra	Narlıdere	3000	1	0	1	0	1	4	05.00-09.00	17.00-21.00
133	26	Male	Employee	Undgra	Buca	9000	1	0	0	0	1	8	13.00-17.00	17.00-21.00
134	28	Male	Stu_Emp	Undgra	Seferihisar	1500	0	0	1	0	1	8	13.00-17.00	
135	20	Female	Student	Undgra	Buca	100	0	0	0	0	1	8	05.00-09.00	
136	21	Male	Employee	Highsc	Çeşme	6000	1	1	0	1	0	8	09.00-13.00	13.00-17.00
137	30	Male	Stu_Emp	Master	Karşıyaka	9000	0	0	1	0	1	4		21.00-05.00
138	21	Male	Student	Undgra	Balçova	1200	1	0	1	0	1	12	05.00-09.00	13.00-17.00
139	23	Female	Employee	Undgra	Karabağlar	6000	1	0	1	0	1	4		17.00-21.00
140	20	Male	Stu_Emp	Undgra	Faltay		1	0	0	0	0	12	09.00-13.00	
141	23	Female	Stu_Emp	Undgra	Urla	0	0	0	0	0	0	8	13.00-17.00	
142	29	Female	Employee	Undgra	Balçova	-1000	1	0	0	0	0	4	13.00-17.00	21.00-05.00
143	25	Male	Stu_Emp	Master	Seferihisar	8000	1	0	0	0	1	8	13.00-17.00	17.00-21.00

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(Table C.1 Cont.)

144	16	Female	Student	Highsc	Konak	1000	1	0	1	0	0	12	05.00-09.00	13.00-17.00
145	22	Female	Student	Undgra	Bayraklı	300	1	0	1	0	0	4	13.00-17.00	
146	25	Male	Student	Undgra	Balçova	2000	1	0	0	0	0	20		13.00-17.00
147	21	Female	Student	Undgra	Konak	300	1	1	0	0	1	4	13.00-17.00	
148	41	Male	Employee	Undgra	Urla	1000	1	0	1	0	1	4	05.00-09.00	17.00-21.00
149	32	Female	Employee	Undgra	Bornova	500	1	0	1	0	1	8	05.00-09.00	17.00-21.00
150	24	Male	Employee	Undgra	Çeşme	1500	1	0	0	0	0	8	13.00-17.00	17.00-21.00
151	40	Female	Employee	Highsc	Bornova	0	0	0	0	0	1	8	05.00-09.00	17.00-21.00
152	37	Female	Employee	Highsc	Çeşme		1	0	0	1	1	4		21.00-05.00
153	38	Female	Employee	Highsc	Çiğli	3000	1	0	0	0	1	4	05.00-09.00	17.00-21.00
154	20	Female	Student	Undgra	Karabağlar	200	0	0	1	0	0	4	05.00-09.00	
155	23	Female	Student	Undgra	Bornova	1500	0	0	0	0	0	4	09.00-13.00	13.00-17.00
156	22	Male	Student	Undgra	Gaziemir	200	1	0	0	0	1	4	05.00-09.00	17.00-21.00
157	32	Male	Employee	Master	Çiğli	0	0	0	1	0	1	8	05.00-09.00	17.00-21.00
158	57	Female	Employee	Highsc	Üçkuyular		1	0	0	0	0	8	05.00-09.00	17.00-21.00

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(Table C.1 Cont.)

159	35	Male	Employee	Undgra	Bornova	15000	1	0	0	0	1	4	09.00-13.00	13.00-17.00
160	36	Male	Employee	Highsc	Karabağlar		1	0	0	0	1	12	05.00-09.00	21.00-05.00
161	40	Male	Employee	Undgra	Konak	4000	1	0	0	0	1	8		
162	21	Female	Student	Undgra	-		1	0	0	0	0	12	05.00-09.00	
163	46	Male	Employee	Primary	Bornova	2500	1	0	0	0	0	8	05.00-09.00	17.00-21.00
164	39	Female	Employee	Undgra	Balçova	4000	1	0	1	0	1	20	05.00-09.00	13.00-17.00
165	39	Male	Employee	Undgra	Gaziemir	0	1	0	1	0	1	8	09.00-13.00	17.00-21.00
166	23	Male	Student	Undgra	Menderes	200	1	0	0	0	0	8	09.00-13.00	
167	63	Male	Employee	Highsc	Gaziemir	1000	1	0	0	0	1	8	05.00-09.00	17.00-21.00
168	51	Male	Employee	Highsc	Karabağlar	2000	0	0	1	0	1	4		17.00-21.00
169	52	Male	Employee	Highsc	-	1500	1	0	1	0	1	4	05.00-09.00	17.00-21.00
170	19	Male	Student	Undgra	Karabağlar	50	0	0	0	0	0	12	09.00-13.00	17.00-21.00
171	44	Male	Employee	Primary	Konak	1500	1	0	1	0	1	8	09.00-13.00	21.00-05.00
172	31	Male	Employee	Highsc	Karabağlar		1	0	0	0	1	4	05.00-09.00	17.00-21.00
173	44	Male	Employee	Undgra	Gaziemir	-2000	1	0	0	0	1	8	05.00-09.00	17.00-21.00

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(Table C.1 Cont.)

174	21	Male	Student	Undgra	Aliağa	1500	0	0	0	0	0	20	05.00-09.00	13.00-17.00
175	30	Female	Employee	Highsc	Konak	0	0	1	0	0	1	8	05.00-09.00	17.00-21.00
176	14	Male	Student	Primary	Balçova		1	0	1	0	0	4	05.00-09.00	13.00-17.00
177	43	Male	Employee	Undgra	Balçova	1000	1	0	0	0	1	8	09.00-13.00	13.00-17.00
178	23	Female	Student	Undgra	Güzelbahçe	200	1	0	1	0	1	4	05.00-09.00	17.00-21.00
179	35	Female	Employee	Highsc	Konak	2000	1	0	1	0	1	8	05.00-09.00	17.00-21.00
180	41	Female	Employee	Highsc	Faltay	1500	1	0	1	0	1	4	05.00-09.00	17.00-21.00
181	16	Male	Student	Highsc	Konak	600	0	1	0	0	0	12	05.00-09.00	13.00-17.00
182	21	Male	Employee	Highsc	Karabağlar	2500	0	0	1	0	1	8		21.00-05.00
183	38	Male	Employee	Undgra	-	1000	1	1	1	0	1	8	05.00-09.00	17.00-21.00
184	20	Male	Student	Undgra	Narlıdere		0	0	0	0	0	12	13.00-17.00	17.00-21.00
185	23	Male	Student	Undgra	Bornova	-2000	0	0	0	0	0	4		13.00-17.00
186	48	Female	Employee	Undgra	Karabağlar	3000	1	0	1	0	1	4	05.00-09.00	21.00-05.00
187	20	Male	Student	Undgra	Bornova	-600	1	0	0	0	0	4	09.00-13.00	17.00-21.00
188	53	Male	Employee	Docdeg	Narlıdere	5000	0	0	1	0	1	4	05.00-09.00	13.00-17.00

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(Table C.1 Cont.)

189	27	Female	Employee	Undgra	Balçova	0	0	0	0	0	1	4	09.00-13.00	21.00-05.00
190	35	Male	Employee	Undgra	Buca		0	0	1	0	1	8	05.00-09.00	17.00-21.00
191	22	Female	Stu_Emp	Undgra	Buca	2500	1	0	0	0	0	8	09.00-13.00	
192	34	Female	Employee	Highsc	Buca	9000	0	0	0	0	0	12	09.00-13.00	21.00-05.00
193	33	Female	Employee	Highsc	Narlıdere	8000	0	0	0	0	0	12	09.00-13.00	21.00-05.00
194	23	Female	Stu_Emp	Undgra	Bornova	3000	1	0	0	0	0	8	09.00-13.00	
195	34	Male	Employee	Undgra	Buca	0	0	0	1	0	1	8	05.00-09.00	17.00-21.00
196	28	Female	Employee	Undgra	Bornova		0	0	0	0	1	4	09.00-13.00	21.00-05.00
197	52	Male	Employee	Docdeg	Narlıdere	6000	0	0	1	0	1	4	05.00-09.00	13.00-17.00
198	21	Male	Student	Undgra	Balçova	-1200	1	0	0	0	0	4	09.00-13.00	17.00-21.00
199	47	Female	Employee	Undgra	Narlıdere	3500	1	0	1	0	1	4	05.00-09.00	21.00-05.00
200	24	Male	Student	Undgra	Bornova	-3000	0	0	0	0	0	4		13.00-17.00
201	19	Male	Student	Undgra	Karabağlar	0	0	0	0	0	0	12	13.00-17.00	17.00-21.00
202	39	Male	Employee	Undgra	-		1	1	1	0	1	8	05.00-09.00	17.00-21.00
203	20	Male	Employee	Highsc	Faltay	3000	0	0	1	0	1	8		21.00-05.00

(Cont. on the next page)

(Table C.1 Cont.)

204	17	Male	Student	Highsc	Konak	300	0	1	0	0	0	12	05.00-09.00	13.00-17.00
205	40	Female	Employee	Highsc	Balçova	2000	1	0	1	0	1	4	05.00-09.00	17.00-21.00
206	36	Female	Employee	Highsc	Gaziemir	3000	1	0	1	0	1	8	05.00-09.00	17.00-21.00
207	22	Female	Student	Undgra	Güzelbahçe	600	1	0	1	0	1	4	05.00-09.00	17.00-21.00
208	44	Male	Employee	Undgra	Balçova	-700	1	0	0	0	1	8	09.00-13.00	13.00-17.00
209	13	Male	Student	Primary	Aliağa	0	1	0	1	0	0	4	05.00-09.00	13.00-17.00
210	31	Female	Employee	Highsc	Konak		0	1	0	0	1	8	05.00-09.00	17.00-21.00
211	20	Male	Student	Undgra	Karabağlar	2000	0	0	0	0	0	12	05.00-09.00	13.00-17.00
212	45	Male	Employee	Undgra	Konak	-3000	1	0	0	0	1	8	05.00-09.00	17.00-21.00
213	30	Male	Employee	Highsc	Karabağlar	500	1	0	0	0	1	4	05.00-09.00	17.00-21.00
214	45	Male	Employee	Primary	Buca	2000	1	0	1	0	1	8	09.00-13.00	21.00-05.00
215	18	Male	Student	Undgra	Karabağlar	300	0	0	0	0	0	12	09.00-13.00	17.00-21.00
216	53	Male	Employee	Highsc	-		1	0	1	0	1	4	05.00-09.00	17.00-21.00
217	50	Male	Employee	Highsc	Menderes	1500	0	0	1	0	1	4		17.00-21.00
218	64	Male	Employee	Highsc	Gaziemir		1	0	0	0	1	8	05.00-09.00	17.00-21.00

(Cont. on the next page)

(Table C.1 Cont.)

219	22	Male	Student	Undgra	Balçova	500	1	0	0	0	0	8	09.00-13.00	
220	40	Male	Employee	Undgra	Bornova		1	0	1	0	1	8	09.00-13.00	17.00-21.00
221	38	Female	Employee	Undgra	Karabağlar	5000	1	0	1	0	1	20	05.00-09.00	13.00-17.00
222	47	Male	Employee	Primary	Konak	3000	1	0	0	0	0	8	05.00-09.00	17.00-21.00
223	20	Female	Student	Undgra	-	0	1	0	0	0	0	12	05.00-09.00	
224	41	Male	Employee	Undgra	Bornova	3000	1	0	0	0	1	8		
225	35	Male	Employee	Highsc	Faltay	500	1	0	0	0	1	12	05.00-09.00	21.00-05.00
226	36	Male	Employee	Undgra	Bornova		1	0	0	0	1	4	09.00-13.00	13.00-17.00
227	56	Female	Employee	Highsc	Gaziemir	0	1	0	0	0	0	8	05.00-09.00	17.00-21.00
228	33	Male	Employee	Master	Çiğli		0	0	1	0	1	8	05.00-09.00	17.00-21.00
229	21	Male	Student	Undgra	Karabağlar	600	1	0	0	0	1	4	05.00-09.00	17.00-21.00
230	24	Female	Student	Undgra	Bornova	1000	0	0	0	0	0	4	09.00-13.00	13.00-17.00
231	19	Female	Student	Undgra	Çeşme	300	0	0	1	0	0	4	05.00-09.00	
232	39	Female	Employee	Highsc	Bornova	2000	1	0	0	0	1	4	05.00-09.00	17.00-21.00
233	36	Female	Employee	Highsc	Çeşme	600	1	0	0	1	1	4		21.00-05.00

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(Table C.1 Cont.)

234	41	Female	Employee	Highsc	Konak	0	0	0	0	0	1	8	05.00-09.00	17.00-21.00
235	23	Male	Employee	Undgra	Balçova	1200	1	0	0	0	0	8	13.00-17.00	17.00-21.00
236	33	Female	Employee	Undgra	-	0	1	0	1	0	1	8	05.00-09.00	17.00-21.00
237	40	Male	Employee	Undgra	Urla	2000	1	0	1	0	1	4	05.00-09.00	17.00-21.00
238	22	Female	Student	Undgra	Bayraklı	0	1	1	0	0	1	4	13.00-17.00	
239	24	Male	Student	Undgra	Konak	1500	1	0	0	0	0	20		13.00-17.00
240	23	Female	Student	Undgra	Seferihisar	0	1	0	1	0	0	4	13.00-17.00	
241	15	Female	Student	Highsc	Balçova	2000	1	0	1	0	0	12	05.00-09.00	13.00-17.00
242	26	Male	Stu_Emp	Master	Karabağlar	10000	1	0	0	0	1	8	13.00-17.00	17.00-21.00
243	28	Female	Employee	Undgra	Faltay	-1500	1	0	0	0	0	4	13.00-17.00	21.00-05.00
244	24	Female	Stu_Emp	Undgra	Urla		0	0	0	0	0	8	13.00-17.00	
245	19	Male	Stu_Emp	Undgra	Balçova	0	1	0	0	0	0	12	09.00-13.00	
246	24	Female	Employee	Undgra	Karşıyaka	7000	1	0	1	0	1	4		17.00-21.00
247	20	Male	Student	Undgra	Çeşme	1800	1	0	1	0	1	12	05.00-09.00	13.00-17.00
248	31	Male	Stu_Emp	Master	Buca	10000	0	0	1	0	1	4		21.00-05.00

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(Table C.1 Cont.)

249	20	Male	Employee	Highsc	Seferihisar	5000	1	1	0	1	0	8	09.00-13.00	13.00-17.00
250	21	Female	Student	Undgra	Karabağlar		0	0	0	0	1	8	05.00-09.00	
251	27	Male	Stu_Emp	Undgra	Narlıdere	2300	0	0	1	0	1	8	13.00-17.00	
252	27	Male	Employee	Undgra	-	10000	1	0	0	0	1	8	13.00-17.00	17.00-21.00
253	40	Male	Employee	Undgra	Gaziemir	3300	1	0	1	0	1	4	05.00-09.00	17.00-21.00
254	25	Female	Student	Master	Karabağlar		1	0	1	0	1	4	09.00-13.00	13.00-17.00
255	35	Female	Employee	Highsc	Karabağlar	1000	0	0	0	0	0	8	05.00-09.00	17.00-21.00
256	26	Male	Employee	Undgra	Çiğli	0	0	0	1	0	1	8	17.00-21.00	
257	22	Female	Stu_Emp	Master	Buca	1000	1	1	0	0	0	8	05.00-09.00	13.00-17.00
258	24	Female	Employee	Undgra	Aliağa		1	0	1	0	1	4	17.00-21.00	21.00-05.00
259	25	Female	Employee	Highsc	Balçova	2500	0	0	0	0	0	8	05.00-09.00	17.00-21.00
260	22	Female	Student	Undgra	Karabağlar		1	0	0	0	0	4	13.00-17.00	17.00-21.00
261	22	Male	Student	Undgra	Buca	900	0	0	0	0	0	20	05.00-09.00	17.00-21.00
262	29	Female	Employee	Undgra	Karşıyaka		1	0	1	0	1	4	13.00-17.00	
263	16	Female	Student	Highsc	Karabağlar	500	0	0	1	0	1	8	09.00-13.00	13.00-17.00

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(Table C.1 Cont.)

264	26	Female	Employee	Undgra	Bayraklı	0	0	0	1	0	1	4	05.00-09.00	17.00-21.00
265	18	Male	Student	Highsc	Balçova	1100	1	1	0	0	0	8	13.00-17.00	21.00-05.00
266	27	Female	Employee	Undgra	Konak	8000	0	0	0	0	1	4	05.00-09.00	17.00-21.00
267	49	Male	Employee	Highsc	Narlıdere	2300	1	0	0	0	1	4	09.00-13.00	17.00-21.00
268	27	Female	Stu_Emp	Master	-		1	0	0	0	1	4	09.00-13.00	17.00-21.00
269	18	Male	Stu_Emp	Highsc	-	3600	0	0	1	0	0	4	05.00-09.00	13.00-17.00
270	27	Male	Employee	Undgra	Urla	10000	1	0	1	0	1	8		17.00-21.00
271	18	Male	Student	Undgra	-	2300	1	0	0	0	0	4	05.00-09.00	17.00-21.00
272	27	Female	Stu_Emp	Master	Gaziemir		1	0	1	0	1	4		17.00-21.00
273	35	Male	Employee	Undgra	-	2500	0	0	0	0	1	4	09.00-13.00	17.00-21.00
274	49	Female	Employee	Undgra	Karabağlar	2500	1	0	0	0	0	8	09.00-13.00	17.00-21.00
275	24	Female	Employee	Undgra	-	2300	0	0	1	0	1	8	05.00-09.00	17.00-21.00
276	28	Male	Student	Master	Bornova	3000	1	0	0	0	1	4	13.00-17.00	
277	20	Male	Student	Undgra	Balçova	900	1	0	0	0	0	20	05.00-09.00	
278	25	Male	Employee	Undgra	Balçova		1	0	0	0	1	4		17.00-21.00

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(Table C.1 Cont.)

279	20	Male	Stu_Emp	Undgra	-	4300	1	0	1	0	1	4	05.00-09.00	17.00-21.00
280	25	Female	Employee	Undgra	Buca	10000	0	0	0	0	1	8	13.00-17.00	21.00-05.00
281	10	Male	Student	Primary	Bornova	0	1	0	1	0	0	8	05.00-09.00	13.00-17.00
282	30	Male	Employee	Undgra	Karşıyaka	9000	0	0	1	0	1	4	17.00-21.00	21.00-05.00
283	36	Male	Employee	Highsc	Narlıdere	-1000	1	0	1	0	1	4	13.00-17.00	
284	26	Male	Employee	Undgra	Karabağlar	1000	1	0	0	0	0	4	09.00-13.00	13.00-17.00
285	24	Female	Stu_Emp	Undgra	Narlıdere		1	0	0	0	0	8	09.00-13.00	13.00-17.00
286	26	Female	Student	Undgra	Buca	0	0	0	0	0	0	4	05.00-09.00	17.00-21.00
287	36	Male	Employee	Highsc	-	0	0	0	0	0	1	4	05.00-09.00	17.00-21.00
288	26	Female	Stu_Emp	Master	Bayraklı	0	0	1	0	0	0	4	05.00-09.00	17.00-21.00
289	22	Male	Student	Undgra	Kemalpaşa		1	0	0	0	1	4	05.00-09.00	17.00-21.00
290	30	Male	Employee	Master	Karşıyaka	5000	1	1	0	1	1	4	05.00-09.00	17.00-21.00
291	45	Male	Employee	Highsc	Karabağlar	3000	1	0	1	0	1	4	05.00-09.00	17.00-21.00
292	19	Male	Student	Undgra	Buca		1	0	0	0	0	8	09.00-13.00	17.00-21.00
293	40	Male	Employee	Highsc	Karabağlar	0	1	0	0	0	1	8	05.00-09.00	17.00-21.00

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(Table C.1 Cont.)

294	47	Female	Employee	Undgra	Bornova		0	0	0	0	1	12	05.00-09.00	17.00-21.00
295	21	Female	Student	Undgra	-	600	1	1	1	0	1	4	05.00-09.00	17.00-21.00
296	31	Male	Employee	Undgra	Konak	0	1	0	1	0	1	4	05.00-09.00	17.00-21.00
297	22	Male	Student	Master	-	750	0	0	1	0	1	4	05.00-09.00	17.00-21.00
298	31	Male	Employee	Undgra	Konak	12000	1	0	1	0	1	4	05.00-09.00	17.00-21.00
299	21	Female	Student	Undgra	Konak	1000	1	0	0	0	1	4	05.00-09.00	17.00-21.00
300	28	Male	Employee	Master	Buca	0	0	0	0	0	1	8	05.00-09.00	17.00-21.00
301	12	Female	Student	Primary	Konak	1200	1	1	1	0	0	4	05.00-09.00	13.00-17.00
302	43	Female	Employee	Undgra	Karabağlar	3000	1	0	1	0	1	4	13.00-17.00	17.00-21.00
303	15	Female	Student	Highsc	Bayraklı	400	0	1	0	0	0	8	05.00-09.00	13.00-17.00
304	53	Female	Employee	Undgra	Konak	5000	1	0	1	0	0	4	09.00-13.00	
305	17	Male	Student	Highsc	Bayraklı	300	0	1	1	0	0	8	05.00-09.00	13.00-17.00
306	32	Male	Stu_Emp	Master	Bornova	4000	0	0	1	0	1	4	13.00-17.00	21.00-05.00
307	12	Male	Student	Primary	Bayraklı	600	0	1	1	0	0	4	05.00-09.00	13.00-17.00
308	45	Female	Employee	Undgra	Konak	2000	1	0	0	0	0	12	09.00-13.00	13.00-17.00

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(Table C.1 Cont.)

309	11	Male	Student	Primary	Bornova	900	1	1	1	0	0	4	05.00-09.00	13.00-17.00
310	56	Female	Employee	Undgra	Konak	4000	1	0	1	0	1	4	13.00-17.00	21.00-05.00
311	16	Male	Student	Highsc	Bornova	350	1	1	0	0	0	4	05.00-09.00	13.00-17.00
312	46	Female	Employee	Undgra	Konak	5000	1	0	1	0	1	4	13.00-17.00	17.00-21.00
313	16	Female	Student	Highsc	Gaziemir	600	0	0	1	0	0	4	05.00-09.00	13.00-17.00
314	57	Female	Employee	Undgra	Konak	3500	1	0	1	0	1	4	13.00-17.00	17.00-21.00
315	16	Male	Student	Highsc	Bornova	600	1	1	0	0	0	8	05.00-09.00	13.00-17.00
316	33	Female	Stu_Emp	Master	Konak	3500	1	0	0	0	1	8	05.00-09.00	17.00-21.00
317	13	Male	Student	Primary	Gaziemir	900	1	1	0	0	0	4	05.00-09.00	13.00-17.00
318	26	Female	Employee	Master	Gaziemir	2500	0	0	1	0	1	8	09.00-13.00	17.00-21.00
319	13	Male	Student	Primary	Konak	900	1	1	0	0	0	4	05.00-09.00	13.00-17.00
320	23	Male	Student	Undgra	Karabağlar		1	0	0	0	1	4	09.00-13.00	17.00-21.00
321	12	Female	Student	Primary	Konak	600	0	0	0	0	0	4	05.00-09.00	13.00-17.00
322	29	Male	Stu_Emp	Master	Karabağlar	7000	1	0	1	0	1	4	05.00-09.00	17.00-21.00
323	12	Female	Student	Primary	Balçova	750	1	1	1	0	0	8	05.00-09.00	13.00-17.00

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(Table C.1 Cont.)

324	28	Female	Student	Master	Urla	1000	1	0	0	0	0	8	09.00-13.00	13.00-17.00
325	10	Male	Student	Primary	Balçova	800	1	0	1	0	0	4	05.00-09.00	13.00-17.00
326	25	Female	Stu_Emp	Undgra	Karşıyaka	3000	1	0	0	0	1	8	05.00-09.00	17.00-21.00
327	10	Female	Student	Primary	Bayraklı	2400	0	1	1	0	0	8	05.00-09.00	13.00-17.00
328	26	Male	Stu_Emp	Master	Göztepe	8000	1	1	0	0	1	4	05.00-09.00	17.00-21.00
329	30	Female	Employee	Highsc	Bostanlı	0	0	0	0	0	1	4	05.00-09.00	17.00-21.00
330	27	Male	Student	Undgra	Konak	2000	1	0	0	0	1	4	17.00-21.00	21.00-05.00
331	34	Female	Employee	Highsc	Buca	3200	1	0	1	0	0	4	05.00-09.00	17.00-21.00
332	22	Female	Student	Undgra	Konak	0	1	0	0	0	0	4	05.00-09.00	17.00-21.00
333	38	Male	Employee	Highsc	Konak	600	0	0	0	0	0	8	05.00-09.00	17.00-21.00
334	22	Female	Student	Undgra	Urla		1	0	0	0	1	4	09.00-13.00	13.00-17.00
335	45	Male	Employee	Primary	Buca	2500	1	0	1	0	1	4	05.00-09.00	17.00-21.00
336	21	Female	Student	Undgra	Buca	0	1	0	1	0	0	4	09.00-13.00	17.00-21.00
337	54	Male	Employee	Primary	Karşıyaka	4000	0	0	1	0	1	4	05.00-09.00	17.00-21.00
338	19	Female	Student	Highsc	Konak	0	0	0	0	0	0	8	05.00-09.00	13.00-17.00

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(Table C.1 Cont.)

339	43	Male	Employee	Highsc	Karşıyaka	5000	0	0	1	0	1	8	05.00-09.00	17.00-21.00
340	21	Male	Student	Undgra	Menemen	-500	0	0	0	0	1	20	13.00-17.00	21.00-05.00
341	45	Female	Employee	Highsc	Konak	3400	0	1	1	0	1	4	09.00-13.00	17.00-21.00
342	21	Female	Student	Undgra	Bornova	750	0	0	0	0	0	20	09.00-13.00	13.00-17.00
343	42	Male	Employee	Highsc	Bayraklı	1200	0	0	0	0	1	20	05.00-09.00	17.00-21.00
344	22	Female	Student	Undgra	Urla		0	0	1	0	1	4	05.00-09.00	17.00-21.00
345	38	Male	Employee	Primary	Konak	-3200	1	0	1	0	1	4	05.00-09.00	17.00-21.00
346	21	Female	Student	Undgra	Bornova	600	1	0	0	0	1	8	09.00-13.00	13.00-17.00
347	56	Male	Employee	Highsc	Karşıyaka	0	0	0	0	0	1	4	05.00-09.00	17.00-21.00
348	22	Female	Student	Undgra	Buca		0	0	0	0	1	12	09.00-13.00	17.00-21.00
349	62	Male	Employee	Highsc	Bayraklı	2300	1	0	1	0	1	4	05.00-09.00	17.00-21.00
350	20	Female	Student	Undgra	-		1	0	0	0	0	8	09.00-13.00	13.00-17.00
351	58	Male	Employee	Highsc	Balçova	2400	0	0	1	0	1	8	05.00-09.00	17.00-21.00
352	20	Female	Student	Undgra	-		1	0	0	0	0	8	09.00-13.00	13.00-17.00
353	42	Female	Employee	Highsc	Buca	4500	1	0	1	0	1	4	05.00-09.00	17.00-21.00

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(Table C.1 Cont.)

354	20	Female	Student	Undgra	Bornova	1000	1	0	0	0	0	12	09.00-13.00	17.00-21.00
355	39	Male	Employee	Primary	Konak	2300	0	0	0	0	1	4	05.00-09.00	17.00-21.00
356	21	Female	Student	Undgra	Bornova	850	1	0	0	0	0	8	09.00-13.00	13.00-17.00
357	49	Male	Employee	Primary	Bayraklı	2000	0	0	1	0	1	4	05.00-09.00	17.00-21.00
358	21	Male	Student	Undgra	-		1	0	0	0	0	8	13.00-17.00	17.00-21.00
359	51	Male	Employee	Primary	Karşıyaka	2800	0	0	1	0	1	4	09.00-13.00	17.00-21.00
360	22	Male	Student	Undgra	Gaziemir	3000	0	0	0	0	0	4	09.00-13.00	17.00-21.00
361	38	Male	Employee	Highsc	Balçova	0	1	0	0	0	1	4	05.00-09.00	17.00-21.00
362	29	Female	Student	Master	Bornova	1800	1	0	0	0	1	8	09.00-13.00	17.00-21.00
363	36	Male	Employee	Highsc	Konak	3000	1	0	1	0	1	4	05.00-09.00	17.00-21.00
364	24	Male	Stu_Emp	Undgra	Gaziemir	1000	1	0	0	0	1	4	09.00-13.00	13.00-17.00
365	34	Male	Employee	Highsc	Buca	0	1	0	0	0	1	20	05.00-09.00	17.00-21.00
366	26	Female	Student	Undgra	Balçova	0	1	0	0	0	0	4	05.00-09.00	13.00-17.00
367	28	Female	Stu_Emp	Master	Buca		0	0	1	0	1	4	05.00-09.00	17.00-21.00
368	22	Female	Student	Undgra	Göztepe	0	0	1	0	0	0	12	05.00-09.00	17.00-21.00

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(Table C.1 Cont.)

369	32	Male	Stu_Emp	Docdeg	Buca	5600	0	0	1	0	1	8	09.00-13.00	17.00-21.00
370	24	Male	Student	Undgra	Karşıyaka	1500	0	0	0	0	1	8	09.00-13.00	13.00-17.00
371	31	Male	Stu_Emp	Docdeg	Balçova	3000	0	0	1	0	1	4	05.00-09.00	17.00-21.00
372	22	Male	Student	Undgra	Urla	0	1	1	0	0	1	4	09.00-13.00	13.00-17.00
373	29	Male	Stu_Emp	Master	Buca	2500	0	0	0	0	1	8	05.00-09.00	17.00-21.00
374	22	Female	Student	Undgra	Güzelbahçe	400	1	0	1	0	1	8	13.00-17.00	09.00-13.00
375	26	Female	Stu_Emp	Master	Konak	1500	0	0	0	0	1	4	09.00-13.00	17.00-21.00
376	22	Female	Student	Undgra	Urla	500	0	0	0	0	1	8	09.00-13.00	13.00-17.00
377	44	Female	Employee	Docdeg	Buca	7500	0	0	1	0	1	20	05.00-09.00	13.00-17.00
378	27	Male	Employee	Undgra	Karabağlar	5000	1	0	0	1	1	4	05.00-09.00	17.00-21.00
379	56	Female	Employee	Highsc	Balçova	0	1	0	1	0	1	8	05.00-09.00	17.00-21.00
380	27	Female	Student	Master	Buca	0	1	0	1	0	1	4	05.00-09.00	17.00-21.00
381	43	Male	Employee	Highsc	Balçova	1200	1	0	1	0	1	8	09.00-13.00	21.00-05.00
382	38	Male	Employee	Highsc	Konak	0	1	0	0	0	1	20	05.00-09.00	17.00-21.00
383	25	Female	Stu_Emp	Undgra	Karşıyaka	1500	0	0	1	0	1	4	05.00-09.00	21.00-05.00
384	46	Male	Employee	Highsc	Konak	0	1	0	0	0	1	12	05.00-09.00	17.00-21.00
385	22	Female	Student	Undgra	Konak	400	0	1	0	0	1	4	05.00-09.00	17.00-21.00

Table C.2 Raw data part 2.

Survey No	15) Important Factor on Travel Mode Preferences BP	16) Important Factor on Travel Mode Preferences DP	17) Pandemic Effect on Daily Life	18) Home-Office Working Status	19) Reason To Prefer Travel Mode BP	20) Reason To Prefer Travel Mode DP	21) School/Work Travel Mode Preference BP	22) School/Work Travel Time BP (min)	23) School/Work Travel Mode Preference DP	24) School/Work Travel Time DP (min)	25) Social Travel Mode Preference BP	26) Social Travel Time BP (min)	27) Weekly Number of Social Travel BP
1	Cost	Health	5	Yes	No, Cost	No, Cost	Pub_t	70	Pub_t	70	Pub_t	40	3
2	Cost	Health	3	Yes	No, Cost	No, Cost	Walk	30	Pub_t	30	Pub_t	30	4
3	Cost	Health	4	Yes	No, Cost	No, Health	Pub_t	60	Priv_car	30	Pub_t	75	4
4	Cost	Health	4	No	Yes	Yes	Pub_t	50	Pub_t	50	Pub_t	60	2
5	Tra_time	Health	5	Yes	Yes	No, Health	Pub_t	120	Priv_car	60	Pub_t	45	4
6	Cost	Health	5	No	No, Cost	Yes	Pub_t	60	Priv_car	30	Pub_t	120	3
7	Tra_time	Tra_time	3	Yes	Yes	No, Tra_time	Pub_t	60	Pub_t	70	Pub_t	30	5
8	Cost	Health	5	No	Yes	Yes	Priv_car	45	Priv_car	45	Priv_car	40	2
9	Tra_time	Health	4	Yes	No, Tra_time	Yes	Pub_t	15	Pub_t	20	Pub_t	75	2
10	Cost	Cost	1	No	No, Comfort	Yes	Pub_t	30	Pub_t	30	Walk	0	0
11	Tra_time	Health	3	Yes	Yes	No, Health	Pub_t	60	Priv_car	45	Pub_t	45	2
12	Tra_time	Health	5	Yes	No, Cost	No, Cost	Pub_t	45	Pub_t	45	Pub_t	45	3
13	Tra_time	Tra_time	4	Yes	Yes	Yes	Pub_t	15	Pub_t	10	Pub_t	30	5
14	Tra_time	Health	5	Yes	Yes	Yes	Priv_car	60	Priv_car	60	Priv_car	0	0
15	Tra_time	Health	4	Yes	No, Tra_time	Yes	Pub_t	40	Pub_t	40	Pub_t	120	3
16	Cost	Health	5	Yes	Yes	Yes	Priv_car	45	Priv_car	45	Priv_car	60	3
17	Cost	Health	4	Yes	No, Cost	No, Health	Pub_t	60	Pub_t	60	Pub_t	30	4
18	Cost	Health	3	No	No, Cost	No, Cost	Pub_t	60	Priv_car	45	Priv_car	45	2
19	Comfort	Comfort	2	Yes	No, Cost	No, Cost	Pub_t	60	Pub_t	60	Pub_t	90	7

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(Table C.2 Cont.)

20	Cost	Cost	3	No	No, Cost	No, Cost	Pub_t	60	Pub_t	60	Walk	30	2
21	Tra_time	Cost	4	No	Yes	Yes	Pub_t	40	Pub_t	40	Priv_car	45	4
22	Tra_time	Cost	4	No	Yes	No, Cost	Priv_car	60	Pub_t	90	Priv_car	60	2
23	Tra_time	Health	3	No	No, Tra_time	No, Health	Pub_t	120	Pub_t	60	Pub_t	30	5
24	Cost	Health	4	No	No, Cost	No, Cost	Pub_t	45	Pub_t	45	Pub_t	60	3
25	Tra_time	Health	5	No	No, Cost	No, Cost	Pub_t	90	Pub_t	90	Pub_t	75	3
26	Tra_time	Health	4	Yes	Yes	Yes	Priv_car	30	Priv_car	30	Priv_car	45	3
27	Comfort	Health	4	Yes	Yes	Yes	Walk	15	Walk	15	Pub_t	75	4
28	Cost	Health	4	No	Yes	Yes	Walk	15	Walk	15	Priv_car	60	2
29	Cost	Health	4	No	Yes	Yes	Walk	20	Walk	20	Pub_t	60	5
30	Cost	Health	4	No	No, Cost	No, Cost	Pub_t	60	Pub_t	60	Pub_t	30	2
31	Tra_time	Comfort	4	No	No, Cost	No, Cost	Pub_t	30	Pub_t	45	Pub_t	30	14
32	Cost	Health	3	No	No, Cost	No, Cost	Pub_t	60	Priv_car	45	Priv_car	45	2
33	Safety	Safety	3	No	Yes	Yes	Walk	15	Walk	15	Pub_t	45	4
34	Tra_time	Health	4	No	Yes	Yes	Priv_car	45	Priv_car	45	Priv_car	45	3
35	Safety	Safety	3	No	Yes	Yes	Pub_t	20	Pub_t	20	Pub_t	30	4
36	Tra_time	Health	4	Yes	Yes	Yes	Priv_car	30	Priv_car	30	Priv_car	60	4
37	Tra_time	Tra_time	4	No	No, Cost	No, Cost	Pub_t	15	Walk	15	Pub_t	45	2
38	Cost	Health	4	No	No, Cost	No, Cost	Pub_t	45	Pub_t	45	Pub_t	60	3
39	Tra_time	Cost	3	Yes	No, Cost	No, Cost	Pub_t	30	Pub_t	50	Pub_t	30	3
40	Tra_time	Cost	4	No	Yes	No, Cost	Priv_car	60	Pub_t	90	Priv_car	60	2
41	Health	Health	3	Yes	Yes	No, Health	Pub_t	90	Priv_car	30	Pub_t	45	3
42	Cost	Cost	3	No	No, Cost	No, Cost	Pub_t	60	Pub_t	60	Walk	30	2
43	Cost	Health	4	Yes	No, Cost	No, Health	Pub_t	45	Pub_t	75	Pub_t	60	5
44	Tra_time	Health	4	No	Yes	Yes	Priv_car	60	Priv_car	60	Priv_car	45	4

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(Table C.2 Cont.)

45	Tra_time	Health	4	Yes	No, Cost	No, Cost	Pub_t	45	Pub_t	45	Pub_t	60	2
46	Cost	Health	4	No	No, Cost	No, Cost	Pub_t	45	Priv_car	30	Pub_t	30	2
47	Comfort	Health	5	Yes	Yes	Yes	Priv_car	40	Priv_car	20	Priv_car	0	0
48	Cost	Cost	4	No	No, Cost	No, Cost	Pub_t	45	Pub_t	45	Priv_car	60	2
49	Cost	Health	3	Yes	No, Cost	Yes	Priv_car	40	Priv_car	40	Pub_t	45	4
50	Cost	Health	4	No	Yes	No, Health	Pub_t	30	Priv_car	20	Priv_car	45	1
51	Comfort	Health	4	Yes	Yes	Yes	Pub_t	35	Priv_car	35	Priv_car	180	3
52	Cost	Cost	4	No	No, Cost	No, Cost	Pub_t	60	Pub_t	60	Pub_t	60	1
53	Tra_time	Health	4	Yes	Yes	No, Cost	Pub_t	35	Pub_t	90	Pub_t	60	2
54	Tra_time	Health	5	No	Yes	Yes	Pub_t	20	Pub_t	20	Priv_car	60	3
55	Cost	Cost	3	Yes	No, Cost	No, Cost	Pub_t	100	Pub_t	100	Pub_t	60	2
56	Cost	Cost	4	No	No, Cost	No, Cost	Pub_t	45	Pub_t	45	Pub_t	30	2
57	Tra_time	Tra_time	5	Yes	No, Cost	No, Tra_time	Pub_t	70	Pub_t	40	Pub_t	30	3
58	Safety	Health	4	Yes	Yes	Yes	Priv_car	20	Priv_car	20	Priv_car	45	1
59	Tra_time	Tra_time	3	Yes	No, Cost	No, Cost	Pub_t	25	Pub_t	25	Pub_t	45	4
60	Safety	Health	5	Yes	Yes	No, Health	Priv_car	20	Priv_car	20	Priv_car	60	2
61	Health	Health	4	Yes	Yes	No, Health	Walk	20	Walk	20	Pub_t	60	5
62	Safety	Health	5	Yes	Yes	No, Cost	Service	30	Priv_car	20	Bic_sco	60	3
63	Cost	Health	5	Yes	Yes	No, Health	Pub_t	70	Priv_car	50	Pub_t	30	3
64	Safety	Health	4	Yes	No, Cost	No, Cost	Service	30	Pub_t	45	Bic_sco	30	3
65	Tra_time	Health	5	Yes	Yes	Yes	Pub_t	50	Pub_t	50	Pub_t	30	4
66	Tra_time	Health	5	Yes	No, Cost	No, Cost	Pub_t	15	Pub_t	15	Pub_t	30	2
67	Cost	Health	4	Yes	No, Cost	No, Health	Pub_t	50	Priv_car	20	Pub_t	45	7
68	Tra_time	Health	4	Yes	No, Cost	No, Cost	Pub_t	15	Pub_t	15	Bic_sco	30	2
69	Comfort	Health	3	Yes	Yes	Yes	Walk	20	Walk	20	Walk	30	3

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(Table C.2 Cont.)

70	Cost	Health	5	Yes	No, Cost	No, Cost	Pub_t	30	Pub_t	30	Pub_t	30	4
71	Tra_time	Health	3	Yes	Yes	Yes	Pub_t	30	Pub_t	30	Pub_t	20	2
72	Tra_time	Health	5	Yes	No, Cost	Yes	Pub_t	30	Priv_car	20	Pub_t	40	3
73	Health	Health	4	Yes	Yes	Yes	Pub_t	15	Walk	45	Pub_t	45	3
74	Tra_time	Health	5	Yes	No, Cost	No, Cost	Pub_t	30	Pub_t	30	Pub_t	30	2
75	Tra_time	Health	4	Yes	Yes	Yes	Walk	15	Walk	15	Priv_car	45	3
76	Tra_time	Health	5	Yes	Yes	No, Cost	Pub_t	15	Pub_t	15	Pub_t	30	3
77	Cost	Safety	5	Yes	Yes	No, Cost	Pub_t	10	Pub_t	30	Priv_car	60	4
78	Tra_time	Health	4	Yes	Yes	Yes	Pub_t	15	Pub_t	15	Priv_car	60	2
79	Cost	Health	5	Yes	No, Cost	No, Health	Pub_t	70	Priv_car	40	Priv_car	30	6
80	Tra_time	Health	4	Yes	Yes	No, Cost	Service	40	Service	40	Pub_t	40	4
81	Safety	Health	4	Yes	Yes	No, Health	Walk	15	Walk	15	Pub_t	30	3
82	Cost	Health	4	Yes	No, Cost	No, Cost	Pub_t	20	Pub_t	20	Pub_t	30	3
83	Cost	Health	4	Yes	No, Cost	No, Cost	Pub_t	50	Pub_t	70	Priv_car	60	3
84	Tra_time	Health	5	Yes	Yes	Yes	Service	30	Service	30	Bic_sco	20	3
85	Tra_time	Cost	4	Yes	No, Tra_time	No, Cost	Pub_t	45	Pub_t	45	Pub_t	30	6
86	Comfort	Health	5	Yes	Yes	Yes	Pub_t	45	Pub_t	45	Pub_t	45	4
87	Tra_time	Health	5	Yes	Yes	Yes	Priv_car	35	Priv_car	35	Priv_car	45	5
88	Comfort	Health	5	Yes	No, Cost	No, Health	Pub_t	40	Pub_t	60	Pub_t	60	4
89	Tra_time	Tra_time	3	Yes	Yes	No, Health	Pub_t	40	Priv_car	30	Priv_car	120	2
90	Tra_time	Health	3	Yes	No, Cost	No, Cost	Pub_t	60	Pub_t	60	Pub_t	30	2
91	Cost	Health	3	Yes	No, Cost	No, Cost	Walk	40	Pub_t	30	Pub_t	30	5
92	Comfort	Comfort	3	No	Yes	No, Cost	Pub_t	45	Pub_t	45	Walk	10	5
93	Cost	Health	3	Yes	Yes	No, Health	Pub_t	25	Walk	45	Pub_t	30	3
94	Cost	Health	3	No	Yes	No, Health	Pub_t	60	Priv_car	30	Priv_car	60	3

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(Table C.2 Cont.)

95	Tra_time	Tra_time	5	Yes	Yes	Yes	Priv_car	35	Priv_car	35	Priv_car	45	4
96	Safety	Health	5	Yes	Yes	No, Health	Pub_t	20	Pub_t	30	Walk	60	3
97	Tra_time	Health	3	Yes	No, Cost	No, Cost	Pub_t	75	Pub_t	75	Pub_t	45	4
98	Cost	Safety	5	No	No, Cost	No, Safety	Pub_t	70	Pub_t	110	Pub_t	90	2
99	Tra_time	Health	4	Yes	No, Cost	No, Health	Pub_t	20	Walk	35	Pub_t	60	6
100	Cost	Health	5	Yes	Yes	Yes	Pub_t	15	Pub_t	45	Pub_t	60	4
101	Tra_time	Tra_time	4	Yes	No, Tra_time	No, Tra_time	Pub_t	25	Pub_t	25	Pub_t	45	4
102	Cost	Health	5	No	Yes	Yes	Priv_car	15	Priv_car	15	Pub_t	60	3
103	Tra_time	Health	4	Yes	Yes	Yes	Priv_car	60	Priv_car	60	Priv_car	60	7
104	Cost	Health	5	Yes	Yes	Yes	Pub_t	90	Priv_car	45	Bic_sco	30	5
105	Cost	Cost	4	Yes	No, Cost	No, Cost	Pub_t	30	Pub_t	30	Pub_t	30	6
106	Tra_time	Tra_time	5	Yes	Yes	Yes	Pub_t	15	Pub_t	15	Pub_t	60	3
107	Tra_time	Tra_time	3	Yes	No, Cost	No, Cost	Pub_t	45	Pub_t	45	Pub_t	30	12
108	Cost	Health	5	Yes	Yes	No, Cost	Pub_t	20	Pub_t	20	Pub_t	40	2
109	Health	Health	3	No	Yes	No, Cost	Priv_car	60	Priv_car	60	Walk	30	3
110	Cost	Health	5	No	No, Cost	Yes	Pub_t	60	Priv_car	30	Pub_t	120	3
111	Cost	Health	4	Yes	No, Cost	No, Cost	Pub_t	50	Pub_t	50	Pub_t	30	3
112	Cost	Tra_time	5	No	No, Tra_time	No, Tra_time	Pub_t	30	Pub_t	60	Pub_t	90	3
113	Cost	Health	4	Yes	Yes	Yes	Pub_t	30	Priv_car	15	Pub_t	30	4
114	Tra_time	Tra_time	3	Yes	Yes	Yes	Pub_t	30	Pub_t	90	Pub_t	30	4
115	Tra_time	Tra_time	4	Yes	Yes	Yes	Priv_car	40	Priv_car	40	Pub_t	90	3
116	Cost	Cost	2	Yes	No, Cost	No, Cost	Pub_t	45	Pub_t	45	Pub_t	60	3
117	Tra_time	Tra_time	4	No	No, Cost	No, Cost	Pub_t	50	Pub_t	50	Pub_t	150	3
118	Cost	Health	5	Yes	Yes	Yes	Pub_t	90	Pub_t	90	Pub_t	45	3
119	Tra_time	Health	3	No	No, Cost	No, Cost	Pub_t	60	Pub_t	60	Pub_t	120	2

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(Table C.2 Cont.)

120	Cost	Cost	2	No	No, Cost	No, Cost	Pub_t	30	Pub_t	30	Priv_car	120	3
121	Health	Health	3	Yes	No, Health	No, Health	Pub_t	70	Pub_t	70	Pub_t	40	5
122	Cost	Health	4	Yes	No, Cost	No, Cost	Pub_t	30	Pub_t	30	Priv_car	45	2
123	Safety	Health	4	Yes	Yes	Yes	Priv_car	20	Priv_car	20	Priv_car	20	4
124	Cost	Health	3	Yes	No, Cost	No, Cost	Pub_t	90	Pub_t	90	Walk	20	4
125	Tra_time	Health	4	Yes	No, Cost	No, Cost	Walk	15	Walk	15	Pub_t	60	4
126	Health	Health	5	No	No, Cost	No, Cost	Pub_t	60	Pub_t	60	Pub_t	0	0
127	Health	Health	3	No	No, Safety	Yes	Priv_car	30	Priv_car	40	Priv_car	40	3
128	Cost	Health	5	No	No, Cost	No, Health	Pub_t	90	Pub_t	90	Pub_t	60	3
129	Tra_time	Tra_time	2	Yes	No, Cost	No, Health	Priv_car	20	Priv_car	20	Pub_t	30	2
130	Cost	Cost	4	No	No, Cost	No, Cost	Pub_t	60	Pub_t	60	Pub_t	120	2
131	Cost	Cost	4	Yes	Yes	Yes	Pub_t	50	Pub_t	50	Pub_t	45	2
132	Comfort	Health	5	No	Yes	No, Cost	Service	50	Service	50	Priv_car	30	3
133	Tra_time	Health	2	Yes	Yes	No, Health	Walk	40	Pub_t	15	Walk	30	8
134	Tra_time	Health	4	No	Yes	No, Health	Pub_t	30	Pub_t	30	Pub_t	60	3
135	Tra_time	Health	4	Yes	Yes	No, Cost	Pub_t	60	Pub_t	60	Pub_t	45	3
136	Cost	Tra_time	5	Yes	Yes	Yes	Pub_t	10	Pub_t	20	Pub_t	60	3
137	Cost	Health	5	Yes	No, Cost	No, Cost	Walk	20	Pub_t	60	Pub_t	30	2
138	Comfort	Health	1	Yes	Yes	Yes	Pub_t	45	Pub_t	45	Pub_t	60	3
139	Tra_time	Health	3	Yes	Yes	Yes	Pub_t	20	Pub_t	20	Pub_t	60	4
140	Tra_time	Health	4	No	Yes	No, Safety	Pub_t	30	Pub_t	30	Walk	20	4
141	Tra_time	Health	4	Yes	No, Tra_time	No, Cost	Pub_t	30	Pub_t	30	Pub_t	90	3
142	Cost	Cost	3	Yes	No, Cost	No, Cost	Pub_t	45	Pub_t	45	Pub_t	60	3
143	Tra_time	Health	5	No	No, Tra_time	Yes	Pub_t	70	Pub_t	50	Pub_t	60	3
144	Tra_time	Health	3	Yes	Yes	Yes	Walk	25	Walk	25	Pub_t	20	3

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(Table C.2 Cont.)

145	Cost	Health	5	No	Yes	No, Health	Walk	15	Walk	15	Pub_t	60	5
146	Cost	Health	3	Yes	No, Cost	No, Cost	Pub_t	90	Pub_t	90	Pub_t	30	3
147	Health	Health	4	Yes	Yes	No, Cost	Pub_t	70	Pub_t	70	Pub_t	30	4
148	Cost	Cost	1	No	No, Cost	No, Cost	Pub_t	90	Pub_t	60	Priv_car	45	4
149	Tra_time	Health	5	Yes	Yes	No, Health	Priv_car	20	Priv_car	20	Priv_car	60	3
150	Cost	Health	3	Yes	No, Cost	No, Cost	Pub_t	15	Pub_t	30	Pub_t	30	4
151	Health	Health	5	No	No, Cost	No, Cost	Pub_t	45	Pub_t	45	Pub_t	60	3
152	Tra_time	Health	5	No	Yes	Yes	Pub_t	45	Pub_t	45	Priv_car	60	2
153	Tra_time	Health	4	Yes	Yes	No, Cost	Pub_t	75	Pub_t	75	Pub_t	30	3
154	Health	Health	4	Yes	Yes	Yes	Pub_t	25	Priv_car	30	Pub_t	90	3
155	Tra_time	Health	5	Yes	Yes	No, Cost	Walk	10	Walk	10	Pub_t	45	3
156	Cost	Health	2	Yes	Yes	No, Cost	Service	45	Service	45	Walk	10	5
157	Cost	Cost	3	No	Yes	No, Health	Pub_t	20	Priv_car	10	Priv_car	60	2
158	Tra_time	Health	5	No	Yes	Yes	Pub_t	25	Pub_t	15	Pub_t	30	3
159	Tra_time	Tra_time	1	Yes	Yes	No, Cost	Pub_t	-	Pub_t	-	Pub_t	45	4
160	Health	Health	1	No	Yes	Yes	Pub_t	15	Pub_t	15	Pub_t	60	2
161	Tra_time	Tra_time	3	No	Yes	No, Tra_time	Pub_t	90	Pub_t	90	Pub_t	60	3
162	Health	Health	5	Yes	Yes	Yes	Pub_t	10	Pub_t	10	Pub_t	60	3
163	Cost	Cost	4	No	Yes	Yes	Walk	30	Walk	30	Pub_t	30	2
164	Cost	Health	5	No	Yes	Yes	Priv_car	15	Priv_car	10	Priv_car	40	3
165	Tra_time	Health	5	Yes	Yes	No, Health	Pub_t	30	Priv_car	20	Priv_car	30	3
166	Health	Health	5	Yes	No, Cost	No, Cost	Pub_t	60	Pub_t	60	Pub_t	60	3
167	Tra_time	Health	5	Yes	Yes	No, Cost	Pub_t	40	Pub_t	40	Pub_t	30	2
168	Tra_time	Health	4	No	No, Cost	No, Cost	Pub_t	30	Pub_t	30	Priv_car	60	2
169	Cost	Cost	3	Yes	Yes	No, Cost	Walk	20	Walk	20	Pub_t	60	4

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(Table C.2 Cont.)

170	Tra_time	Health	5	No	Yes	No, Cost	Pub_t	20	Pub_t	20	Walk	0	0
171	Cost	Health	4	No	Yes	Yes	Pub_t	45	Pub_t	45	Pub_t	60	3
172	Cost	Cost	1	No	No, Comfort	Yes	Pub_t	30	Pub_t	30	Walk	0	0
173	Cost	Health	4	No	Yes	Yes	Pub_t	10	Pub_t	10	Pub_t	60	2
174	Tra_time	Health	5	Yes	No, Cost	No, Cost	Walk	15	Pub_t	45	Walk	45	1
175	Cost	Cost	3	No	No, Cost	No, Cost	Pub_t	20	Pub_t	20	Pub_t	60	3
176	Tra_time	Health	2	Yes	Yes	No, Cost	Pub_t	25	Pub_t	25	Walk	10	4
177	Tra_time	Tra_time	5	No	Yes	Yes	Pub_t	30	Pub_t	30	Pub_t	60	3
178	Cost	Health	5	No	No, Cost	No, Health	Pub_t	60	Pub_t	60	Pub_t	60	3
179	Cost	Health	5	No	No, Cost	Yes	Pub_t	40	Priv_car	20	Priv_car	60	3
180	Comfort	Health	5	No	Yes	No, Health	Pub_t	30	Priv_car	15	Priv_car	60	2
181	Cost	Cost	5	Yes	No, Cost	No, Cost	Pub_t	60	Pub_t	60	Walk	30	3
182	Tra_time	Health	1	No	Yes	No, Health	Priv_car	5	Priv_car	5	Priv_car	60	3
183	Cost	Health	3	No	Yes	No, Health	Pub_t	20	Priv_car	10	Priv_car	60	2
184	Tra_time	Tra_time	5	No	No, Tra_time	No, Tra_time	Pub_t	10	Pub_t	15	Pub_t	120	2
185	Tra_time	Health	5	Yes	No, Cost	No, Cost	Pub_t	75	Pub_t	75	Pub_t	60	3
186	Tra_time	Tra_time	5	No	Yes	Yes	Walk	5	Walk	5	Taxi	45	3
187	Cost	Cost	5	Yes	Yes	Yes	Walk	15	Pub_t	45	Walk	45	5
188	Health	Health	5	Yes	Yes	Yes	Pub_t	60	Priv_car	20	Pub_t	60	4
189	Cost	Health	5	No	No, Cost	No, Cost	Pub_t	15	Pub_t	15	Pub_t	30	3
190	Cost	Health	5	No	Yes	Yes	Priv_car	15	Priv_car	15	Priv_car	60	5
191	Cost	Cost	3	Yes	No, Cost	No, Health	Walk	20	Walk	20	Walk	30	4
192	Cost	Health	4	No	No, Cost	No, Cost	Pub_t	90	Pub_t	30	Pub_t	90	2
193	Cost	Health	4	No	No, Cost	No, Cost	Pub_t	75	Pub_t	30	Pub_t	90	3
194	Cost	Cost	3	Yes	No, Cost	No, Health	Walk	15	Walk	15	Walk	30	2

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(Table C.2 Cont.)

195	Cost	Health	5	No	Yes	Yes	Priv_car	30	Priv_car	30	Priv_car	60	4
196	Cost	Health	5	No	No, Cost	No, Cost	Pub_t	5	Pub_t	5	Pub_t	30	2
197	Health	Health	5	Yes	Yes	Yes	Pub_t	50	Priv_car	15	Pub_t	60	3
198	Cost	Cost	5	Yes	Yes	Yes	Walk	20	Pub_t	45	Walk	45	7
199	Tra_time	Tra_time	5	No	Yes	Yes	Walk	10	Walk	10	Taxi	45	2
200	Tra_time	Health	5	Yes	No, Cost	No, Cost	Pub_t	90	Pub_t	90	Pub_t	60	2
201	Tra_time	Tra_time	5	No	No, Tra_time	No, Tra_time	Pub_t	20	Pub_t	30	Pub_t	120	3
202	Cost	Health	3	No	Yes	No, Health	Pub_t	30	Priv_car	10	Priv_car	60	3
203	Tra_time	Health	1	No	Yes	No, Health	Priv_car	15	Priv_car	5	Priv_car	60	4
204	Cost	Cost	5	Yes	No, Cost	No, Cost	Pub_t	45	Pub_t	45	Walk	30	2
205	Comfort	Health	5	No	Yes	No, Health	Pub_t	45	Priv_car	20	Priv_car	60	3
206	Cost	Health	5	No	No, Cost	Yes	Pub_t	30	Priv_car	20	Priv_car	60	2
207	Cost	Health	5	No	No, Cost	No, Health	Pub_t	75	Pub_t	75	Pub_t	60	4
208	Tra_time	Tra_time	5	No	Yes	Yes	Pub_t	35	Pub_t	35	Pub_t	60	2
209	Tra_time	Health	2	Yes	Yes	No, Cost	Pub_t	30	Pub_t	30	Walk	10	2
210	Cost	Cost	3	No	No, Cost	No, Cost	Pub_t	30	Pub_t	30	Pub_t	60	4
211	Tra_time	Health	5	Yes	No, Cost	No, Cost	Walk	20	Pub_t	45	Walk	45	3
212	Cost	Health	4	No	Yes	Yes	Pub_t	5	Pub_t	5	Pub_t	60	1
213	Cost	Cost	1	No	No, Comfort	Yes	Pub_t	20	Pub_t	20	Walk	0	0
214	Cost	Health	4	No	Yes	Yes	Pub_t	50	Pub_t	50	Pub_t	60	2
215	Tra_time	Health	5	No	Yes	No, Cost	Pub_t	30	Pub_t	30	Walk	0	0
216	Cost	Cost	3	Yes	Yes	No, Cost	Walk	15	Walk	15	Pub_t	60	1
217	Tra_time	Health	4	No	No, Cost	No, Cost	Pub_t	45	Pub_t	45	Priv_car	60	3
218	Tra_time	Health	5	Yes	Yes	No, Cost	Pub_t	30	Pub_t	30	Pub_t	30	3
219	Health	Health	5	Yes	No, Cost	No, Cost	Pub_t	50	Pub_t	50	Pub_t	60	2

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(Table C.2 Cont.)

220	Tra_time	Health	5	Yes	Yes	No, Health	Pub_t	20	Priv_car	15	Priv_car	30	2
221	Cost	Health	5	No	Yes	Yes	Priv_car	30	Priv_car	20	Priv_car	40	4
222	Cost	Cost	4	No	Yes	Yes	Walk	20	Walk	20	Pub_t	30	1
223	Health	Health	5	Yes	Yes	Yes	Pub_t	15	Pub_t	15	Pub_t	60	5
224	Tra_time	Tra_time	3	No	Yes	No, Tra_time	Pub_t	180	Pub_t	180	Pub_t	60	4
225	Health	Health	1	No	Yes	Yes	Pub_t	20	Pub_t	20	Pub_t	60	3
226	Tra_time	Tra_time	1	Yes	Yes	No, Cost	Pub_t	0	Pub_t	0	Pub_t	45	5
227	Tra_time	Health	5	No	Yes	Yes	Pub_t	30	Pub_t	20	Pub_t	30	4
228	Cost	Cost	3	No	Yes	No, Health	Pub_t	30	Priv_car	20	Priv_car	60	3
229	Cost	Health	2	Yes	Yes	No, Cost	Service	60	Service	60	Walk	10	4
230	Tra_time	Health	5	Yes	Yes	No, Cost	Walk	5	Walk	5	Pub_t	45	4
231	Health	Health	4	Yes	Yes	Yes	Pub_t	20	Priv_car	30	Pub_t	90	2
232	Tra_time	Health	4	Yes	Yes	No, Cost	Pub_t	60	Pub_t	60	Pub_t	30	2
233	Tra_time	Health	5	No	Yes	Yes	Pub_t	30	Pub_t	30	Priv_car	60	3
234	Health	Health	5	No	No, Cost	No, Cost	Pub_t	60	Pub_t	60	Pub_t	60	2
235	Cost	Health	3	Yes	No, Cost	No, Cost	Pub_t	20	Pub_t	30	Pub_t	30	3
236	Tra_time	Health	5	Yes	Yes	No, Health	Priv_car	15	Priv_car	15	Priv_car	60	4
237	Cost	Cost	1	No	No, Cost	No, Cost	Pub_t	75	Pub_t	45	Priv_car	45	3
238	Health	Health	4	Yes	Yes	No, Cost	Pub_t	60	Pub_t	60	Pub_t	30	3
239	Cost	Health	3	Yes	No, Cost	No, Cost	Pub_t	75	Pub_t	75	Pub_t	30	4
240	Cost	Health	5	No	Yes	No, Health	Walk	10	Walk	10	Pub_t	60	4
241	Tra_time	Health	3	Yes	Yes	Yes	Walk	30	Walk	30	Pub_t	20	2
242	Tra_time	Health	5	No	No, Tra_time	Yes	Pub_t	75	Pub_t	60	Pub_t	60	4
243	Cost	Cost	3	Yes	No, Cost	No, Cost	Pub_t	60	Pub_t	60	Pub_t	60	2
244	Tra_time	Health	4	Yes	No, Tra_time	No, Cost	Pub_t	25	Pub_t	30	Pub_t	90	4

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(Table C.2 Cont.)

245	Tra_time	Health	4	No	Yes	No, Safety	Pub_t	45	Pub_t	45	Walk	20	3
246	Tra_time	Health	3	Yes	Yes	Yes	Pub_t	10	Pub_t	10	Pub_t	60	5
247	Comfort	Health	1	Yes	Yes	Yes	Pub_t	30	Pub_t	30	Pub_t	60	2
248	Cost	Health	5	Yes	No, Cost	No, Cost	Walk	30	Pub_t	60	Pub_t	30	1
249	Cost	Tra_time	5	Yes	Yes	Yes	Pub_t	15	Pub_t	25	Pub_t	60	4
250	Tra_time	Health	4	Yes	Yes	No, Cost	Pub_t	45	Pub_t	45	Pub_t	45	2
251	Tra_time	Health	4	No	Yes	No, Health	Pub_t	45	Pub_t	45	Pub_t	60	4
252	Tra_time	Health	2	Yes	Yes	No, Health	Walk	40	Pub_t	20	Walk	30	10
253	Comfort	Health	5	No	Yes	No, Cost	Service	45	Service	45	Priv_car	30	4
254	Cost	Cost	4	Yes	Yes	Yes	Pub_t	45	Pub_t	-	Pub_t	45	1
255	Cost	Cost	4	No	No, Cost	No, Cost	Pub_t	45	Pub_t	45	Pub_t	120	3
256	Tra_time	Tra_time	2	Yes	No, Cost	No, Health	Priv_car	10	Priv_car	10	Pub_t	30	1
257	Cost	Health	5	No	No, Cost	No, Health	Pub_t	100	Pub_t	100	Pub_t	60	4
258	Health	Health	3	No	No, Safety	Yes	Priv_car	25	Priv_car	40	Priv_car	40	2
259	Health	Health	5	No	No, Cost	No, Cost	Pub_t	50	Pub_t	50	Pub_t	0	0
260	Tra_time	Health	4	Yes	No, Cost	No, Cost	Walk	10	Walk	10	Pub_t	60	5
261	Cost	Health	3	Yes	No, Cost	No, Cost	Pub_t	70	Pub_t	70	Walk	20	3
262	Safety	Health	4	Yes	Yes	Yes	Priv_car	15	Priv_car	15	Priv_car	20	5
263	Cost	Health	4	Yes	No, Cost	No, Cost	Pub_t	40	Pub_t	40	Priv_car	45	3
264	Health	Health	3	Yes	No, Health	No, Health	Pub_t	60	Pub_t	60	Pub_t	40	4
265	Cost	Cost	2	No	No, Cost	No, Cost	Pub_t	20	Pub_t	20	Priv_car	120	2
266	Tra_time	Health	3	No	No, Cost	No, Cost	Pub_t	75	Pub_t	75	Pub_t	120	1
267	Cost	Health	5	Yes	Yes	Yes	Pub_t	75	Pub_t	75	Pub_t	45	2
268	Tra_time	Tra_time	4	No	No, Cost	No, Cost	Pub_t	45	Pub_t	45	Pub_t	150	2
269	Cost	Cost	2	Yes	No, Cost	No, Cost	Pub_t	30	Pub_t	30	Pub_t	60	4

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(Table C.2 Cont.)

270	Tra_time	Tra_time	4	Yes	Yes	Yes	Priv_car	30	Priv_car	30	Pub_t	90	1
271	Tra_time	Tra_time	3	Yes	Yes	Yes	Pub_t	45	Pub_t	90	Pub_t	30	3
272	Cost	Health	4	Yes	Yes	Yes	Pub_t	20	Priv_car	10	Pub_t	30	5
273	Cost	Tra_time	5	No	No, Tra_time	No, Tra_time	Pub_t	20	Pub_t	40	Pub_t	90	4
274	Cost	Health	4	Yes	No, Cost	No, Cost	Pub_t	70	Pub_t	70	Pub_t	30	2
275	Cost	Health	5	No	No, Cost	Yes	Pub_t	75	Priv_car	40	Pub_t	120	4
276	Health	Health	3	No	Yes	No, Cost	Priv_car	60	Priv_car	60	Walk	30	2
277	Cost	Health	5	Yes	Yes	No, Cost	Pub_t	30	Pub_t	30	Pub_t	40	3
278	Tra_time	Tra_time	3	Yes	No, Cost	No, Cost	Pub_t	60	Pub_t	60	Pub_t	30	14
279	Tra_time	Tra_time	5	Yes	Yes	Yes	Pub_t	20	Pub_t	20	Pub_t	60	4
280	Cost	Cost	4	Yes	No, Cost	No, Cost	Pub_t	20	Pub_t	20	Pub_t	30	5
281	Cost	Health	5	Yes	Yes	Yes	Pub_t	75	Priv_car	30	Bic_sco	30	4
282	Tra_time	Health	4	Yes	Yes	Yes	Priv_car	45	Priv_car	45	Priv_car	60	10
283	Cost	Health	5	No	Yes	Yes	Priv_car	10	Priv_car	10	Pub_t	60	2
284	Tra_time	Tra_time	4	Yes	No, Tra_time	No, Tra_time	Pub_t	30	Pub_t	30	Pub_t	45	3
285	Cost	Health	5	Yes	Yes	Yes	Pub_t	30	Pub_t	45	Pub_t	60	3
286	Tra_time	Health	4	Yes	No, Cost	No, Health	Pub_t	25	Walk	35	Pub_t	60	7
287	Cost	Safety	5	No	No, Cost	No, Safety	Pub_t	90	Pub_t	110	Pub_t	90	3
288	Tra_time	Health	3	Yes	No, Cost	No, Cost	Pub_t	120	Pub_t	120	Pub_t	45	5
289	Safety	Health	5	Yes	Yes	No, Health	Pub_t	30	Pub_t	40	Walk	60	4
290	Tra_time	Tra_time	5	Yes	Yes	Yes	Priv_car	25	Priv_car	25	Priv_car	45	5
291	Cost	Health	3	No	Yes	No, Health	Pub_t	50	Priv_car	20	Priv_car	60	4
292	Cost	Health	3	Yes	Yes	No, Health	Pub_t	30	Walk	45	Pub_t	30	2
293	Comfort	Comfort	3	No	Yes	No, Cost	Pub_t	60	Pub_t	60	Walk	10	4
294	Cost	Health	3	Yes	No, Cost	No, Cost	Walk	30	Pub_t	30	Pub_t	30	4

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(Table C.2 Cont.)

295	Tra_time	Health	3	Yes	No, Cost	No, Cost	Pub_t	50	Pub_t	50	Pub_t	30	4
296	Tra_time	Tra_time	3	Yes	Yes	No, Health	Pub_t	35	Priv_car	25	Priv_car	120	1
297	Comfort	Health	5	Yes	No, Cost	No, Health	Pub_t	50	Pub_t	75	Pub_t	60	3
298	Tra_time	Health	5	Yes	Yes	Yes	Priv_car	25	Priv_car	25	Priv_car	45	7
299	Comfort	Health	5	Yes	Yes	Yes	Pub_t	30	Pub_t	30	Pub_t	45	3
300	Tra_time	Cost	4	Yes	No, Tra_time	No, Cost	Pub_t	60	Pub_t	60	Pub_t	30	5
301	Tra_time	Health	5	Yes	Yes	Yes	Service	20	Service	20	Bic_sco	20	2
302	Cost	Health	4	Yes	No, Cost	No, Cost	Pub_t	45	Pub_t	60	Priv_car	60	2
303	Cost	Health	4	Yes	No, Cost	No, Cost	Pub_t	30	Pub_t	30	Pub_t	30	2
304	Safety	Health	4	Yes	Yes	No, Health	Walk	10	Walk	10	Pub_t	30	2
305	Tra_time	Health	4	Yes	Yes	No, Cost	Service	30	Service	30	Pub_t	40	3
306	Cost	Health	5	Yes	No, Cost	No, Health	Pub_t	60	Priv_car	30	Priv_car	30	7
307	Tra_time	Health	4	Yes	Yes	Yes	Pub_t	25	Pub_t	25	Priv_car	60	4
308	Cost	Safety	5	Yes	Yes	No, Cost	Pub_t	5	Pub_t	30	Priv_car	60	2
309	Tra_time	Health	5	Yes	Yes	No, Cost	Pub_t	30	Pub_t	30	Pub_t	30	4
310	Tra_time	Health	4	Yes	Yes	Yes	Walk	10	Walk	10	Priv_car	45	2
311	Tra_time	Health	5	Yes	No, Cost	No, Cost	Pub_t	20	Pub_t	20	Pub_t	30	3
312	Health	Health	4	Yes	Yes	Yes	Pub_t	10	Walk	60	Pub_t	45	4
313	Tra_time	Health	5	Yes	No, Cost	Yes	Pub_t	45	Priv_car	30	Pub_t	40	2
314	Tra_time	Health	3	Yes	Yes	Yes	Pub_t	20	Pub_t	20	Pub_t	20	1
315	Cost	Health	5	Yes	No, Cost	No, Cost	Pub_t	45	Pub_t	45	Pub_t	30	3
316	Comfort	Health	3	Yes	Yes	Yes	Walk	30	Walk	30	Walk	30	2
317	Tra_time	Health	4	Yes	No, Cost	No, Cost	Pub_t	20	Pub_t	20	Bic_sco	30	3
318	Cost	Health	4	Yes	No, Cost	No, Health	Pub_t	45	Priv_car	20	Pub_t	45	6
319	Tra_time	Health	5	Yes	No, Cost	No, Cost	Pub_t	30	Pub_t	30	Pub_t	30	3

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(Table C.2 Cont.)

320	Tra_time	Health	5	Yes	Yes	Yes	Pub_t	45	Pub_t	45	Pub_t	30	5
321	Safety	Health	4	Yes	No, Cost	No, Cost	Service	20	Pub_t	30	Bic_sco	30	4
322	Cost	Health	5	Yes	Yes	No, Health	Pub_t	60	Priv_car	50	Pub_t	30	1
323	Safety	Health	5	Yes	Yes	No, Cost	Service	40	Priv_car	30	Bic_sco	60	2
324	Health	Health	4	Yes	Yes	No, Health	Walk	20	Walk	20	Pub_t	60	3
325	Safety	Health	5	Yes	Yes	No, Health	Priv_car	30	Priv_car	30	Priv_car	60	4
326	Tra_time	Tra_time	3	Yes	No, Cost	No, Cost	Pub_t	20	Pub_t	20	Pub_t	45	3
327	Safety	Health	4	Yes	Yes	Yes	Priv_car	30	Priv_car	30	Priv_car	45	2
328	Tra_time	Tra_time	5	Yes	No, Cost	No, Tra_time	Pub_t	60	Pub_t	30	Pub_t	30	1
329	Cost	Cost	4	No	No, Cost	No, Cost	Pub_t	40	Pub_t	40	Pub_t	30	4
330	Cost	Cost	3	Yes	No, Cost	No, Cost	Pub_t	90	Pub_t	90	Pub_t	60	3
331	Tra_time	Health	5	No	Yes	Yes	Pub_t	30	Pub_t	30	Priv_car	60	2
332	Tra_time	Health	4	Yes	Yes	No, Cost	Pub_t	40	Pub_t	90	Pub_t	60	3
333	Cost	Cost	4	No	No, Cost	No, Cost	Pub_t	75	Pub_t	75	Pub_t	60	2
334	Comfort	Health	4	Yes	Yes	Yes	Pub_t	25	Priv_car	25	Priv_car	180	2
335	Cost	Health	4	No	Yes	No, Health	Pub_t	40	Priv_car	20	Priv_car	45	2
336	Cost	Health	3	Yes	No, Cost	Yes	Priv_car	40	Priv_car	40	Pub_t	45	2
337	Cost	Cost	4	No	No, Cost	No, Cost	Pub_t	60	Pub_t	60	Priv_car	60	3
338	Comfort	Health	5	Yes	Yes	Yes	Priv_car	40	Priv_car	20	Priv_car	0	0
339	Cost	Health	4	No	No, Cost	No, Cost	Pub_t	30	Priv_car	15	Pub_t	30	3
340	Tra_time	Health	4	Yes	No, Cost	No, Cost	Pub_t	45	Pub_t	45	Pub_t	60	3
341	Tra_time	Health	4	No	Yes	Yes	Priv_car	50	Priv_car	50	Priv_car	45	3
342	Tra_time	Health	4	Yes	No, Cost	No, Health	Pub_t	60	Pub_t	90	Pub_t	60	7
343	Cost	Cost	3	No	No, Cost	No, Cost	Pub_t	75	Pub_t	75	Walk	30	3
344	Health	Health	3	Yes	Yes	No, Health	Pub_t	90	Priv_car	30	Pub_t	45	4

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(Table C.2 Cont.)

345	Tra_time	Cost	4	No	Yes	No, Cost	Priv_car	50	Pub_t	75	Priv_car	60	3
346	Tra_time	Tra_time	3	Yes	No, Cost	No, Cost	Pub_t	30	Pub_t	50	Pub_t	30	2
347	Cost	Health	4	No	No, Cost	No, Cost	Pub_t	60	Pub_t	60	Pub_t	60	2
348	Tra_time	Health	4	No	No, Cost	No, Cost	Pub_t	20	Walk	20	Pub_t	30	3
349	Tra_time	Health	4	Yes	Yes	Yes	Priv_car	45	Priv_car	45	Priv_car	60	3
350	Safety	Safety	3	No	Yes	Yes	Pub_t	25	Pub_t	25	Pub_t	30	5
351	Tra_time	Health	4	No	Yes	Yes	Priv_car	30	Priv_car	30	Priv_car	45	2
352	Safety	Safety	3	No	Yes	Yes	Walk	15	Walk	15	Pub_t	45	5
353	Cost	Health	3	No	No, Cost	No, Cost	Pub_t	75	Priv_car	50	Priv_car	45	3
354	Tra_time	Comfort	4	No	No, Cost	No, Cost	Pub_t	25	Pub_t	40	Pub_t	30	14
355	Cost	Health	4	No	No, Cost	No, Cost	Pub_t	45	Pub_t	45	Pub_t	30	1
356	Cost	Health	4	No	Yes	Yes	Walk	20	Walk	20	Pub_t	60	7
357	Cost	Health	4	No	Yes	Yes	Walk	20	Walk	20	Priv_car	60	1
358	Comfort	Health	4	Yes	Yes	Yes	Walk	15	Walk	15	Pub_t	90	3
359	Tra_time	Health	4	Yes	Yes	Yes	Priv_car	20	Priv_car	20	Priv_car	45	4
360	Cost	Health	5	No	No, Cost	No, Cost	Pub_t	90	Pub_t	90	Pub_t	150	2
361	Cost	Health	4	No	No, Cost	No, Cost	Pub_t	30	Pub_t	30	Pub_t	60	4
362	Tra_time	Health	3	No	No, Tra_time	No, Health	Pub_t	120	Pub_t	60	Pub_t	30	3
363	Tra_time	Cost	4	No	Yes	No, Cost	Priv_car	45	Pub_t	75	Priv_car	60	3
364	Cost	Cost	4	No	Yes	Yes	Pub_t	30	Pub_t	30	Priv_car	45	5
365	Cost	Cost	3	No	No, Cost	No, Cost	Pub_t	45	Pub_t	45	Walk	30	4
366	Comfort	Comfort	2	Yes	No, Cost	No, Cost	Pub_t	60	Pub_t	60	Pub_t	90	5
367	Cost	Health	3	No	No, Cost	No, Cost	Pub_t	50	Priv_car	30	Priv_car	45	3
368	Cost	Health	4	Yes	No, Cost	No, Health	Pub_t	60	Pub_t	60	Pub_t	30	2
369	Cost	Health	5	Yes	Yes	Yes	Priv_car	30	Priv_car	30	Priv_car	60	2

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(Table C.2 Cont.)

370	Tra_time	Health	4	Yes	No, Tra_time	Yes	Pub_t	40	Pub_t	40	Pub_t	120	2
371	Tra_time	Health	5	Yes	Yes	Yes	Priv_car	50	Priv_car	50	Priv_car	0	0
372	Tra_time	Tra_time	3	Yes	Yes	Yes	Pub_t	10	Pub_t	10	Pub_t	30	8
373	Tra_time	Health	5	Yes	No, Cost	No, Cost	Pub_t	30	Pub_t	30	Pub_t	45	4
374	Tra_time	Health	3	Yes	Yes	No, Health	Pub_t	50	Priv_car	35	Pub_t	45	3
375	Cost	Cost	1	No	No, Comfort	Yes	Pub_t	45	Pub_t	45	Walk	0	0
376	Tra_time	Health	4	Yes	No, Tra_time	Yes	Pub_t	10	Pub_t	20	Pub_t	60	3
377	Cost	Health	5	No	Yes	Yes	Priv_car	30	Priv_car	30	Priv_car	50	3
378	Tra_time	Tra_time	3	Yes	Yes	No, Tra_time	Pub_t	60	Pub_t	70	Pub_t	30	2
379	Cost	Health	5	No	No, Cost	Yes	Pub_t	75	Priv_car	45	Pub_t	90	4
380	Tra_time	Health	5	Yes	Yes	No, Health	Pub_t	150	Priv_car	90	Pub_t	60	6
381	Cost	Health	4	No	Yes	Yes	Pub_t	45	Pub_t	45	Pub_t	60	4
382	Cost	Cost	3	No	No, Cost	No, Cost	Pub_t	45	Pub_t	45	Walk	30	2
383	Cost	Health	5	Yes	No, Cost	No, Health	Pub_t	45	Priv_car	25	Pub_t	60	5
384	Cost	Health	3	Yes	No, Cost	No, Cost	Walk	20	Pub_t	20	Pub_t	30	5
385	Cost	Health	4	Yes	No, Cost	No, Cost	Pub_t	60	Pub_t	60	Pub_t	30	1

Table C.3 Raw data part 3.

Survey No	28) Social Travel Mode Preference DP	29) Social Travel Time DP (min)	30) Weekly Number of Social Travel DP	31) Travel Mode Preference Order BP (Walking)	32) Travel Mode Preference Order BP (Bicycle-Scooter)	33) Travel Mode Preference Order BP (Private Car)	34) Travel Mode Preference Order BP (Public Transportation)	35) Travel Mode Preference Order DP (Walking)	36) Travel Mode Preference Order DP (Bicycle-Scooter)	37) Travel Mode Preference Order BP (Private Car)	38) Travel Mode Preference Order BP (Public Transportation)
1	Pub_t	40	1	2	3	1	4	3	2	1	4
2	Pub_t	30	1	1	1	1	1	1	1	1	4
3	Priv_car	45	1	1	4	2	3	2	3	1	4
4	Walk	30	1	3	4	2	1	1	4	2	3
5	Priv_car	45	1	3	4	1	2	2	4	1	3
6	Walk	15	3	4	3	1	2	2	3	1	4
7	Pub_t	30	1	3	4	1	2	2	3	1	4
8	Priv_car	0	0	3	4	1	2	3	4	1	2
9	Pub_t	75	1	3	4	1	2	2	4	1	3
10	Walk	0	0	2	3	1	4	2	3	1	4
11	Pub_t	0	0	4	3	1	2	3	2	1	4
12	Walk	0	0	3	4	1	2	1	2	3	4
13	Pub_t	30	4	2	3	1	4	1	2	3	4
14	Walk	0	0	3	4	1	2	2	3	1	4
15	Priv_car	120	2	3	4	1	2	2	3	1	4
16	Walk	20	2	3	4	2	1	3	4	1	2
17	Walk	15	1	2	4	3	1	1	2	3	4
18	Walk	20	2	3	4	1	2	2	3	1	4
19	Pub_t	90	3	3	4	1	2	3	4	1	2

(Cont. on the next page)

(Table C.3 Cont.)

20	Walk	10	2	2	4	1	3	2	4	1	3
21	Priv_car	45	3	1	4	2	3	2	3	1	4
22	Walk	30	2	3	4	1	2	2	3	1	4
23	Priv_car	60	1	3	4	1	2	2	3	1	4
24	Pub_t	60	1	3	4	1	2	2	4	1	3
25	Pub_t	45	2	1	4	2	3	3	2	1	4
26	Walk	15	3	3	4	1	2	2	4	1	3
27	Priv_car	45	3	1	4	2	3	1	3	2	4
28	Walk	20	2	2	4	1	3	2	3	1	4
29	Walk	30	1	2	4	1	3	1	4	2	3
30	Pub_t	30	1	2	4	1	3	2	4	1	3
31	Pub_t	30	4	4	2	1	3	3	1	2	4
32	Walk	20	2	3	4	1	2	2	3	1	4
33	Pub_t	45	3	2	4	1	3	2	4	1	3
34	Priv_car	30	1	2	4	1	3	2	4	1	3
35	Pub_t	30	3	3	4	1	2	3	4	1	2
36	Priv_car	60	1	3	4	1	2	2	3	1	4
37	Pub_t	0	0	2	3	1	4	2	3	1	4
38	Pub_t	60	1	3	4	1	2	2	4	1	3
39	Pub_t	50	1	4	4	1	4	1	1	1	4
40	Walk	30	2	3	4	1	2	2	3	1	4
41	Priv_car	45	4	2	4	1	3	2	3	1	4
42	Walk	10	2	2	4	1	3	2	4	1	3
43	Pub_t	30	3	1	1	1	4	1	1	1	4
44	Priv_car	45	2	4	3	1	2	3	2	1	4

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(Table C.3 Cont.)

45	Walk	45	2	2	1	1	4	1	1	1	4
46	Priv_car	30	1	2	4	1	3	2	3	1	4
47	Priv_car	0	0	4	2	1	3	4	2	1	3
48	Priv_car	30	1	3	4	1	2	2	3	1	4
49	Priv_car	60	1	2	2	1	2	2	2	1	3
50	Walk	20	2	3	4	1	2	2	4	1	3
51	Priv_car	0	0	1	4	1	1	1	4	1	3
52	Walk	20	2	2	4	1	3	2	4	1	3
53	Pub_t	45	1	2	2	1	2	2	2	1	4
54	Walk	30	1	3	4	2	1	2	4	1	3
55	Pub_t	60	3	1	4	2	2	1	4	2	2
56	Pub_t	0	0	3	4	1	2	2	4	1	3
57	Walk	15	4	4	2	3	1	2	1	3	4
58	Priv_car	0	0	3	4	1	2	3	2	1	4
59	Pub_t	45	1	3	4	1	2	2	3	1	3
60	Walk	0	0	1	3	2	4	1	3	2	4
61	Walk	45	4	1	3	1	2	1	2	1	3
62	Walk	0	0	4	1	2	3	1	2	3	4
63	Walk	0	0	1	1	1	2	1	1	1	4
64	Walk	20	1	2	1	4	3	1	3	2	4
65	Pub_t	30	1	1	4	2	2	1	4	1	3
66	Walk	0	0	4	3	1	2	1	3	2	4
67	Priv_car	45	2	3	4	1	2	2	3	1	4
68	Walk	0	0	2	1	3	4	2	1	3	4
69	Walk	30	2	1	4	2	3	1	2	2	4

(Cont. on the next page)

(Table C.3 Cont.)

70	Walk	20	2	1	4	2	3	1	3	2	4
71	Walk	0	0	1	3	2	4	1	3	2	4
72	Priv_car	60	1	3	4	1	2	2	3	1	4
73	Priv_car	120	1	1	4	1	1	1	4	1	4
74	Bic_sco	30	2	3	2	1	4	3	2	1	4
75	Priv_car	30	1	2	4	1	3	1	4	1	4
76	Walk	30	1	2	1	4	3	2	1	3	4
77	Pub_t	20	4	4	4	1	4	4	4	1	4
78	Walk	20	2	3	1	2	4	3	1	2	4
79	Priv_car	30	2	2	3	1	2	2	3	1	4
80	Walk	30	2	1	4	2	3	1	4	2	3
81	Walk	0	0	1	4	2	3	1	3	2	4
82	Pub_t	30	1	2	4	1	3	2	3	1	4
83	Priv_car	0	0	1	4	1	4	1	4	1	4
84	Priv_car	20	1	2	1	3	4	2	3	1	4
85	Pub_t	30	1	1	1	1	1	1	1	1	4
86	Pub_t	0	0	3	4	2	1	3	2	1	4
87	Priv_car	60	1	2	4	1	4	1	4	1	4
88	Priv_car	0	0	3	4	2	1	2	3	1	4
89	Priv_car	60	1	2	2	1	3	2	2	1	3
90	Pub_t	30	2	2	3	1	4	2	3	1	4
91	Pub_t	30	1	1	1	1	1	1	1	1	4
92	Walk	20	2	3	4	1	2	2	3	1	4
93	Walk	30	1	2	1	1	3	2	1	1	4
94	Walk	30	2	3	4	1	2	3	4	1	2

(Cont. on the next page)

(Table C.3 Cont.)

95	Priv_car	0	0	1	1	1	3	1	1	1	4
96	Walk	60	1	4	3	1	2	1	3	2	4
97	Pub_t	30	1	1	1	1	3	1	1	1	4
98	Pub_t	0	0	2	4	1	3	2	4	1	3
99	Walk	0	0	1	3	3	1	1	4	1	4
100	Pub_t	0	0	2	4	3	1	1	3	2	4
101	Pub_t	45	1	2	1	4	1	3	1	4	1
102	Pub_t	60	1	2	4	1	3	2	4	1	3
103	Priv_car	60	4	3	2	1	4	3	2	1	4
104	Walk	0	0	4	3	1	2	3	2	1	4
105	Pub_t	30	3	3	4	1	1	2	4	1	2
106	Pub_t	60	1	1	4	3	2	1	4	3	2
107	Pub_t	30	5	4	4	4	4	4	4	4	4
108	Pub_t	0	0	2	3	4	1	1	2	3	4
109	Walk	30	2	1	1	1	1	1	1	1	3
110	Walk	15	3	4	3	1	2	2	3	1	4
111	Pub_t	30	2	2	3	1	4	2	2	1	4
112	Pub_t	0	0	3	4	2	1	2	4	1	3
113	Priv_car	20	5	3	3	2	2	4	4	1	3
114	Walk	30	3	2	4	3	1	2	1	3	4
115	Walk	0	0	3	4	1	2	3	4	1	2
116	Walk	60	2	3	2	1	4	3	2	1	4
117	Walk	120	1	2	4	1	2	3	4	1	4
118	Pub_t	45	1	3	4	2	1	3	4	2	1
119	Pub_t	60	1	2	2	1	4	4	2	2	2

(Cont. on the next page)

(Table C.3 Cont.)

120	Walk	20	3	4	3	2	1	4	3	2	1
121	Walk	45	2	3	2	1	2	1	2	1	4
122	Walk	20	3	4	3	1	2	2	3	1	4
123	Priv_car	20	2	1	4	3	4	1	3	1	4
124	Walk	10	2	3	4	1	2	1	3	2	4
125	Pub_t	60	1	3	3	1	2	2	4	1	3
126	Pub_t	0	0	3	4	1	2	2	3	1	4
127	Priv_car	40	3	4	3	2	1	4	3	2	1
128	Pub_t	30	2	3	4	2	1	1	4	2	3
129	Priv_car	60	1	3	4	1	2	3	4	1	2
130	Walk	10	3	3	4	1	2	3	2	1	4
131	Pub_t	30	1	2	2	2	3	2	2	1	4
132	Walk	10	3	2	4	1	3	2	4	1	3
133	Priv_car	30	4	1	3	2	2	1	3	4	2
134	Walk	60	5	2	1	3	4	2	1	3	4
135	Pub_t	45	1	2	3	1	2	1	3	1	3
136	Walk	0	0	3	4	1	2	3	4	1	2
137	Pub_t	30	1	1	4	1	3	1	3	2	4
138	Walk	0	0	3	4	1	2	1	2	3	4
139	Pub_t	60	3	3	4	1	2	2	3	1	4
140	Walk	0	0	4	3	2	1	4	3	1	2
141	Walk	20	1	2	3	1	3	1	2	1	4
142	Pub_t	60	1	2	4	3	1	1	2	3	4
143	Pub_t	60	1	2	2	1	1	1	2	2	4
144	Walk	0	0	2	3	4	1	2	3	4	1

(Cont. on the next page)

(Table C.3 Cont.)

145	Walk	0	0	1	1	1	2	1	1	1	4
146	Walk	0	0	3	4	1	2	1	2	3	4
147	Walk	0	0	1	4	2	3	1	3	2	4
148	Priv_car	0	0	3	4	1	2	4	3	1	2
149	Priv_car	0	0	3	4	2	1	3	4	1	2
150	Pub_t	30	1	4	3	2	1	4	2	1	3
151	Walk	0	0	3	4	1	2	3	4	1	2
152	Walk	20	3	3	4	2	1	3	4	2	1
153	Walk	0	0	3	4	1	2	1	3	2	4
154	Priv_car	60	1	3	4	1	2	2	3	1	4
155	Pub_t	45	2	2	4	1	3	2	3	1	4
156	Walk	10	3	1	4	3	2	1	2	3	4
157	Priv_car	60	2	3	4	2	1	3	4	1	2
158	Walk	0	0	1	4	3	2	1	4	3	2
159	Pub_t	45	3	3	4	1	2	3	4	1	2
160	Walk	0	0	3	4	2	1	1	4	2	3
161	Pub_t	30	2	3	4	1	2	2	4	1	3
162	Walk	90	1	2	4	3	1	2	4	3	1
163	Pub_t	30	1	2	4	3	1	2	4	3	1
164	Priv_car	0	0	3	4	1	2	3	4	1	2
165	Priv_car	0	0	3	4	1	2	2	3	1	4
166	Pub_t	60	1	1	2	3	4	1	2	3	4
167	Walk	15	2	3	4	1	2	3	4	1	2
168	Walk	10	3	3	4	1	2	2	3	1	4
169	Walk	10	2	3	4	1	2	2	3	1	4

(Cont. on the next page)

(Table C.3 Cont.)

170	Walk	0	0	4	1	3	2	4	1	2	3
171	Walk	30	1	3	4	2	1	1	4	2	3
172	Walk	0	0	2	3	1	4	2	3	1	4
173	Walk	0	0	3	4	1	2	2	3	1	4
174	Walk	0	0	3	4	2	1	1	2	3	4
175	Pub_t	30	2	3	4	2	1	3	4	1	2
176	Walk	0	0	1	4	3	2	1	2	3	4
177	Pub_t	30	1	3	4	2	1	1	4	2	3
178	Pub_t	30	1	3	4	2	1	2	3	1	4
179	Priv_car	60	1	3	4	1	2	2	3	1	4
180	Priv_car	0	0	3	4	1	2	2	4	1	3
181	Walk	30	2	1	2	4	3	1	2	3	4
182	Priv_car	0	0	4	3	1	2	2	3	1	4
183	Priv_car	10	1	3	4	1	2	2	3	1	4
184	Walk	0	0	2	4	3	1	1	4	3	2
185	Pub_t	60	1	3	4	1	2	1	2	3	4
186	Taxi	45	1	1	4	3	2	1	3	2	4
187	Walk	20	7	1	4	3	2	1	4	3	2
188	Walk	0	0	2	4	1	3	1	3	2	4
189	Walk	0	0	3	4	1	2	2	3	1	4
190	Priv_car	0	0	3	4	2	1	3	4	1	2
191	Walk	0	0	1	4	2	3	1	3	2	4
192	Taxi	20	1	3	4	1	2	1	3	2	4
193	Taxi	20	1	3	4	1	2	1	3	2	4
194	Walk	0	0	1	4	2	3	1	3	2	4

(Cont. on the next page)

(Table C.3 Cont.)

195	Priv_car	0	0	3	4	2	1	3	4	1	2
196	Walk	0	0	3	4	1	2	2	3	1	4
197	Walk	0	0	2	4	1	3	1	3	2	4
198	Walk	20	7	1	4	3	2	1	4	3	2
199	Taxi	45	1	1	4	3	2	1	3	2	4
200	Pub_t	60	1	3	4	1	2	1	2	3	4
201	Walk	0	0	2	4	3	1	1	4	3	2
202	Priv_car	10	1	3	4	1	2	2	3	1	4
203	Walk	0	0	4	3	1	2	2	3	1	4
204	Walk	30	2	1	2	4	3	1	2	3	4
205	Walk	0	0	3	4	1	2	2	4	1	3
206	Priv_car	60	1	3	4	1	2	2	3	1	4
207	Pub_t	30	1	3	4	2	1	2	3	1	4
208	Pub_t	30	1	3	4	2	1	1	4	2	3
209	Walk	0	0	1	4	3	2	1	2	3	4
210	Pub_t	30	2	3	4	2	1	3	4	1	2
211	Walk	0	0	3	4	2	1	1	2	3	4
212	Walk	0	0	3	4	1	2	2	3	1	4
213	Walk	0	0	2	3	1	4	2	3	1	4
214	Walk	30	1	3	4	2	1	1	4	2	3
215	Walk	0	0	4	1	3	2	4	1	2	3
216	Walk	10	2	3	4	1	2	2	3	1	4
217	Walk	10	3	3	4	1	2	2	3	1	4
218	Walk	15	2	3	4	1	2	3	4	1	2
219	Pub_t	60	1	1	2	3	4	1	2	3	4

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(Table C.3 Cont.)

220	Walk	0	0	3	4	1	2	2	3	1	4
221	Walk	0	0	3	4	1	2	3	4	1	2
222	Pub_t	30	1	2	4	3	1	2	4	3	1
223	Walk	90	1	2	4	3	1	2	4	3	1
224	Pub_t	30	2	3	4	1	2	2	4	1	3
225	Walk	0	0	3	4	2	1	1	4	2	3
226	Pub_t	45	3	3	4	1	2	3	4	1	2
227	Walk	0	0	1	4	3	2	1	4	3	2
228	Priv_car	60	2	3	4	2	1	3	4	1	2
229	Walk	10	3	1	4	3	2	1	2	3	4
230	Pub_t	45	2	2	4	1	3	2	3	1	4
231	Priv_car	60	1	3	4	1	2	2	3	1	4
232	Walk	0	0	3	4	1	2	1	3	2	4
233	Walk	20	3	3	4	2	1	3	4	2	1
234	Pub_t	0	0	3	4	1	2	3	4	1	2
235	Pub_t	30	1	4	3	2	1	4	2	1	3
236	Walk	0	0	3	4	2	1	3	4	1	2
237	Walk	0	0	3	4	1	2	4	3	1	2
238	Pub_t	0	0	1	4	2	3	1	3	2	4
239	Pub_t	0	0	3	4	1	2	1	2	3	4
240	Pub_t	0	0	1	1	1	2	1	1	1	4
241	Pub_t	0	0	2	3	4	1	2	3	4	1
242	Pub_t	60	1	2	2	1	1	1	2	2	4
243	Pub_t	60	1	2	4	3	1	1	2	3	4
244	Walk	20	1	2	3	1	3	1	2	1	4

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(Table C.3 Cont.)

245	Walk	0	0	4	3	2	1	4	3	1	2
246	Pub_t	60	3	3	4	1	2	2	3	1	4
247	Walk	0	0	3	4	1	2	1	2	3	4
248	Pub_t	30	1	1	4	1	3	1	3	2	4
249	Walk	0	0	3	4	1	2	3	4	1	2
250	Pub_t	45	1	2	3	1	2	1	3	1	3
251	Walk	60	5	2	1	3	4	2	1	3	4
252	Priv_car	30	4	1	3	2	2	1	3	4	2
253	Walk	10	3	2	4	1	3	2	4	1	3
254	Pub_t	30	1	2	2	2	3	2	2	1	4
255	Walk	10	3	3	4	1	2	3	2	1	4
256	Priv_car	60	1	3	4	1	2	3	4	1	2
257	Pub_t	30	2	3	4	2	1	1	4	2	3
258	Priv_car	40	3	4	3	2	1	4	3	2	1
259	Pub_t	0	0	3	4	1	2	2	3	1	4
260	Pub_t	60	1	3	3	1	2	2	4	1	3
261	Walk	10	2	3	4	1	2	1	3	2	4
262	Priv_car	20	2	1	4	3	4	1	3	1	4
263	Walk	20	3	4	3	1	2	2	3	1	4
264	Walk	45	2	3	2	1	2	1	2	1	4
265	Walk	20	3	4	3	2	1	4	3	2	1
266	Pub_t	60	1	2	2	1	4	4	2	2	2
267	Pub_t	45	1	3	4	2	1	3	4	2	1
268	Walk	120	1	2	4	1	2	3	4	1	4
269	Walk	60	2	3	2	1	4	3	2	1	4

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(Table C.3 Cont.)

270	Walk	0	0	3	4	1	2	3	4	1	2
271	Walk	30	3	2	4	3	1	2	1	3	4
272	Priv_car	20	5	3	3	2	2	4	4	1	3
273	Pub_t	0	0	3	4	2	1	2	4	1	3
274	Pub_t	30	2	2	3	1	4	2	2	1	4
275	Walk	15	3	4	3	1	2	2	3	1	4
276	Walk	30	2	1	1	1	1	1	1	1	3
277	Pub_t	0	0	2	3	4	1	1	2	3	4
278	Pub_t	30	5	4	4	4	4	4	4	4	4
279	Pub_t	60	1	1	4	3	2	1	4	3	2
280	Pub_t	30	3	3	4	1	1	2	4	1	2
281	Bic_sco	0	0	4	3	1	2	3	2	1	4
282	Priv_car	60	4	3	2	1	4	3	2	1	4
283	Pub_t	60	1	2	4	1	3	2	4	1	3
284	Pub_t	45	1	2	1	4	1	3	1	4	1
285	Pub_t	0	0	2	4	3	1	1	3	2	4
286	Walk	0	0	1	3	3	1	1	4	1	4
287	Pub_t	0	0	2	4	1	3	2	4	1	3
288	Pub_t	30	1	1	1	1	3	1	1	1	4
289	Walk	60	1	4	3	1	2	1	3	2	4
290	Priv_car	0	0	1	1	1	3	1	1	1	4
291	Walk	30	2	3	4	1	2	3	4	1	2
292	Walk	30	1	2	1	1	3	2	1	1	4
293	Walk	20	2	3	4	1	2	2	3	1	4
294	Pub_t	30	1	1	1	1	1	1	1	1	4

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(Table C.3 Cont.)

295	Pub_t	30	2	2	3	1	4	2	3	1	4
296	Priv_car	60	1	2	2	1	3	2	2	1	3
297	Priv_car	0	0	3	4	2	1	2	3	1	4
298	Priv_car	60	1	2	4	1	4	1	4	1	4
299	Pub_t	0	0	3	4	2	1	3	2	1	4
300	Pub_t	30	1	1	1	1	1	1	1	1	4
301	Bic_sco	20	1	2	1	3	4	2	3	1	4
302	Priv_car	0	0	1	4	1	4	1	4	1	4
303	Pub_t	30	1	2	4	1	3	2	3	1	4
304	Walk	0	0	1	4	2	3	1	3	2	4
305	Walk	30	2	1	4	2	3	1	4	2	3
306	Priv_car	30	2	2	3	1	2	2	3	1	4
307	Walk	20	2	3	1	2	4	3	1	2	4
308	Pub_t	20	4	4	4	1	4	4	4	1	4
309	Walk	30	1	2	1	4	3	2	1	3	4
310	Priv_car	30	1	2	4	1	3	1	4	1	4
311	Bic_sco	30	2	3	2	1	4	3	2	1	4
312	Priv_car	120	1	1	4	1	1	1	4	1	4
313	Priv_car	60	1	3	4	1	2	2	3	1	4
314	Pub_t	0	0	1	3	2	4	1	3	2	4
315	Walk	20	2	1	4	2	3	1	3	2	4
316	Walk	30	2	1	4	2	3	1	2	2	4
317	Walk	0	0	2	1	3	4	2	1	3	4
318	Priv_car	45	2	3	4	1	2	2	3	1	4
319	Walk	0	0	4	3	1	2	1	3	2	4

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(Table C.3 Cont.)

320	Pub_t	30	1	1	4	2	2	1	4	1	3
321	Walk	20	1	2	1	4	3	1	3	2	4
322	Walk	0	0	1	1	1	2	1	1	1	4
323	Walk	0	0	4	1	2	3	1	2	3	4
324	Walk	45	4	1	3	1	2	1	2	1	3
325	Walk	0	0	1	3	2	4	1	3	2	4
326	Pub_t	45	1	3	4	1	2	2	3	1	3
327	Priv_car	0	0	3	4	1	2	3	2	1	4
328	Walk	15	4	4	2	3	1	2	1	3	4
329	Pub_t	0	0	3	4	1	2	2	4	1	3
330	Pub_t	60	3	1	4	2	2	1	4	2	2
331	Walk	30	1	3	4	2	1	2	4	1	3
332	Pub_t	45	1	2	2	1	2	2	2	1	4
333	Walk	20	2	2	4	1	3	2	4	1	3
334	Priv_car	0	0	1	4	1	1	1	4	1	3
335	Walk	20	2	3	4	1	2	2	4	1	3
336	Priv_car	60	1	2	2	1	2	2	2	1	3
337	Priv_car	30	1	3	4	1	2	2	3	1	4
338	Walk	0	0	4	2	1	3	4	2	1	3
339	Priv_car	30	1	2	4	1	3	2	3	1	4
340	Walk	45	2	2	1	1	4	1	1	1	4
341	Priv_car	45	2	4	3	1	2	3	2	1	4
342	Pub_t	30	2	1	1	1	4	1	1	1	4
343	Walk	10	2	2	4	1	3	2	4	1	3
344	Priv_car	45	4	2	4	1	3	2	3	1	4

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(Table C.3 Cont.)

345	Walk	30	2	3	4	1	2	2	3	1	4
346	Pub_t	50	1	4	4	1	4	1	1	1	4
347	Pub_t	60	1	3	4	1	2	2	4	1	3
348	Pub_t	0	0	2	3	1	4	2	3	1	4
349	Priv_car	60	1	3	4	1	2	2	3	1	4
350	Pub_t	30	3	3	4	1	2	3	4	1	2
351	Priv_car	30	1	2	4	1	3	2	4	1	3
352	Pub_t	45	3	2	4	1	3	2	4	1	3
353	Walk	20	2	3	4	1	2	2	3	1	4
354	Pub_t	30	5	4	2	1	3	3	1	2	4
355	Pub_t	30	1	2	4	1	3	2	4	1	3
356	Walk	30	1	2	4	1	3	1	4	2	3
357	Walk	20	2	2	4	1	3	2	3	1	4
358	Priv_car	45	3	1	4	2	3	1	3	2	4
359	Walk	15	3	3	4	1	2	2	4	1	3
360	Pub_t	60	2	1	4	2	3	3	2	1	4
361	Pub_t	60	1	3	4	1	2	2	4	1	3
362	Priv_car	60	1	3	4	1	2	2	3	1	4
363	Walk	30	2	3	4	1	2	2	3	1	4
364	Priv_car	45	3	1	4	2	3	2	3	1	4
365	Walk	10	2	2	4	1	3	2	4	1	3
366	Pub_t	90	3	3	4	1	2	3	4	1	2
367	Walk	20	2	3	4	1	2	2	3	1	4
368	Walk	15	1	2	4	3	1	1	2	3	4
369	Walk	20	2	3	4	2	1	3	4	1	2

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(Table C.3 Cont.)

370	Priv_car	120	2	3	4	1	2	2	3	1	4
371	Walk	0	0	3	4	1	2	2	3	1	4
372	Pub_t	30	4	2	3	1	4	1	2	3	4
373	Walk	0	0	3	4	1	2	1	2	3	4
374	Pub_t	0	0	4	3	1	2	3	2	1	4
375	Walk	0	0	2	3	1	4	2	3	1	4
376	Pub_t	60	1	3	4	1	2	2	4	1	3
377	Walk	0	0	3	4	1	2	3	4	1	2
378	Pub_t	30	1	3	4	1	2	2	3	1	4
379	Walk	15	3	4	3	1	2	2	3	1	4
380	Priv_car	60	1	3	4	1	2	2	4	1	3
381	Walk	30	1	3	4	2	1	1	4	2	3
382	Walk	10	2	2	4	1	3	2	4	1	3
383	Priv_car	45	1	1	4	2	3	2	3	1	4
384	Pub_t	30	1	1	1	1	1	1	1	1	4
385	Pub_t	30	1	2	3	1	4	3	2	1	4