

NEGOTIATING TRANSPORTATION INSECURITY: LOCAL RESPONSES AND
COPING STRATEGIES IN SAN JOSÉ, CA

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ABSTRACT

NEGOTIATING TRANSPORTATION INSECURITY: LOCAL RESPONSES AND COPING STRATEGIES IN SAN JOSÉ, CA

by Andrew K. Ng

Transportation insecurity causes adverse effects on people's lives by limiting access to opportunities and resources even in San José. Understanding how people experience transportation insecurity in metropolitan areas may contribute to building a better transportation system. I conducted my research study by interviewing downtown San José residents and analyzing their stories on the effects of transportation insecurity and what they did to cope with the situation to move around San José. I analyzed the contents of the interviews through qualitative data analysis. Findings suggest that people experience transportation insecurity as time infringement through congested traffic, convoluted schedules, and service complications, which causes worry, anxiety, and missed opportunities. People's experiences and reactions allude to what could be improved in San José's transportation infrastructure.

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LIST OF ABBREVIATIONS

ACE – Altamont Corridor Express
BART – Bay Area Rapid Transit
MTI – Mineta Transportation Institute
SJSU – San José State University
US – United States
VTA – Valley Transit Authority

Introduction

Transportation is an important resource that connects people and grants access to other resources or opportunities such as food, work, and more. This situates transportation as a key component in many people's livelihoods, whether they are conscious of its role or not. Because of the implicit importance of transportation, more scholarly discussion about people's interactions with transportation would benefit future development and improvement of urban quality of life. For example, if the available transportation modes are inadequate, then someone's mobility may be insufficient or costly. Also, if the transportation alternatives are scarce or unobtainable, then someone may be stuck in a transportation desert and have to work even harder to get to their destinations. Thus, people may suffer great adverse effects as they would have to focus more of their time, money, and health on dealing with transportation. Properly improving upon these issues may increase the chance of more people having a healthy and productive life.

In this study, I research Downtown San José residents' experiences with transportation insecurity—the lack of regular access to adequate transportation to lead a healthy and productive life—to see how people deal with the issue and understand the effects on their lives (Chen et al. 2021; Gould-Werth et al. 2018; Jiao and Dillivan 2013). I draw inspiration from Amber Wutich's and Alexandra Brewis's (2014) resource insecurity framework and focus on the causes and effects of transportation insecurity. I situate my study on people's experience with transportation insecurity on key insight from three main concepts: Mobility, the Politics of Transportation Infrastructure, and Resource Insecurity. From there, I ask three research questions: (1) How do people experience transit insecurity?; (2) How do people

cope with transportation insecurity?; and (3) What are the felt individual-level impacts of transportation insecurity? The answers to these questions fulfill two objectives: (1) To understand how people experience transportation insecurity in a metropolitan environment, and (2) To discover local practices that have the potential to inform urban planning and policy. In the end, this information can contribute to the anthropological literature on transportation and be used to help future transportation plans to improve people's lives.

Problem Statement

In many cases around the world, transportation infrastructure is often unequal due to urban planning favoring certain groups and places over others (Sadana 2018). This imbalance can result in transportation insecurity or transportation deserts —areas of a place lacking transportation supply (Jiao and Dillivan 2013)— which makes conducting essential daily activities difficult for many people. For example, poor maintenance, programs to recapture their lost markets, or favoritism for more affluent communities can cause transportation insecurity and make some areas more accessible than others and cause people to react and cope in different ways (Garrett and Taylor 1999; Sadana 2018). These limitations have serious effects on people's social, material, and cultural connections, as inadequate transportation limits access to jobs, schools, socialization, and other opportunities (Firat 2016; Gaither et al. 2016; Jobson 2018; Sheller 2015; Yarrington 2015). Following the COVID-19 pandemic, these issues have only been exacerbated due to changes in transportation availability and people's mobility needs.

Significance and Deliverables

In this study, I partnered with and received funding from the Mineta Transportation Institute (MTI) at San José State University (SJSU) with Dr. Melissa Beresford as the Principal Investigator; and I received assistance from CommUniverCity, a community engagement center at SJSU, in gathering potential participants in San José through their social network. This study is significant because understanding San José residents' transportation experiences and transportation-insecurity coping strategies contribute to institutional and anthropological knowledge on transportation insecurity as resource insecurity and how transportation insecurity affects people's daily lives and helps inform the policymakers' decisions to help develop more inclusive transportation infrastructure. In addition, the findings of my research contribute knowledge to MTI and their objectives to expand surface transportation access and to create a safer, more reliable, and more resilient transportation system. As a result, these research findings guide the two reports: one to MTI for the fulfillment of my grant, and one to SJSU's applied anthropology master's program for the fulfillment of the program.

History of the Study

In anthropology, transportation insecurity is a somewhat niche topic as anthropological information on the concept is sparse. While the topic of my paper is not new, not many anthropologists have studied transportation insecurity or transportation deserts explicitly as resource insecurity compared to studies on other resource insecurities such as food, housing, or healthcare. Many similar anthropological studies on transportation focus more on the politics of transportation, rather than people and transportation insecurity as a whole.

Regardless, the past anthropological studies on transportation have exemplified the importance of transportation for people.

In the case of my study, my research topic started as a suggestion to study transportation deserts, similar to SJSU Professor Dan Nathan-Roberts. But after more discussions and considerations, I shifted my research topic to transportation insecurity and planned to start my research around August 2020, but the COVID-19 pandemic slowed everything down. As a result, my research started in December 2020 and ended in February 2021. Afterward, my data analysis and report writing took longer than expected but was completed in November 2021.

Literature Review

Mobility

Mobility is an important aspect of people's lives because the concept refers to the ability for people to move between different places and within different spaces, which in turn impacts their social lives, health, and economic opportunities (Gaither et al. 2016; Roberts 2008; Sheller 2015; Yarrington 2015). For example, the bus is a major social network for the elderly because public transportation serves as a destination for elderly individuals to meet each other, acts as a symbol of independence, and provides a service that takes them to the places they need to go to (Roberts 2008). Thus, a lack of mobility, and by extension a lack of access to adequate public transportation, is very detrimental to people's livelihoods, especially for those that may rely on public transportation, such as elderly people, low-income communities, and peripheral neighborhoods (Firat 2016; Roberts 2008). In addition, mobility also has an important role for people that need regular medical service as a lack of

adequate transportation services or infrastructure will considerably worsen a patient's health due to not being able to receive necessary medical attention reliably (Cornelius et al. 2016).

While there are alternatives that can mitigate these issues, those options are often more expensive, require more responsibility, or require additional resources and skills to use, which may not be possible for everyone.

The Politics of Transportation

In general, infrastructure is the fundamental system or network that supports the distribution or access of resources in an area. But as a system that connects people to goods, resources, and ideas; this system is heavily connected to politics and the people (Larkin 2013). In this case, transportation infrastructure can be, but not limited to, roads, bus stops, buses, cars, train stations, railroads, freeways and highways, sidewalks, and bridges. That said, politics has a major role in transportation infrastructure, especially in choosing where the transportation infrastructure develops in core and peripheral areas, where transportation service takes people, the prices for the service, and the way the infrastructure is presented to the people. Due to these factors, transportation infrastructure ideals may target particular groups, while others become neglected (Fleming 2016; Larkin 2013). This often sets up urban planning and politics to contribute to the unequal distribution of transportation resources and services. Generally, transportation infrastructures are constructed to serve particular communities over others and provide limited destinations (Fleming 2016; Gaither et al. 2016; Sadana 2018; Sheller 2015; Yarrington 2015; Zhang 2016). For example, Junfeng Jiao's and Maxwell Dillivan's (2013) data suggests that transportation systems tend to be "hub-and-spoke" layouts where the further you move from the core, the less transportation

supply is available. In addition, urban planning can cause transportation insecurity due to preconceived notions of traffic in a given location or politics that perpetuate racialized access that influences public transportation infrastructure (Fleming 2016; Sadana 2018; Sheller 2015). In other cases, transportation infrastructure could be representative of state power for their citizens but could also be used against them as the most vulnerable citizens are often pushed aside to make way for infrastructural projects, while the target citizens gain the benefits (Larkin 2013). Whether or not the results are deliberate or unintended, certain perceptions of class, race, or traffic can cause areas to experience transportation insecurity and possibly become transportation deserts.

Resource Insecurity

Resource insecurity is a difficult issue to mitigate at an individual level since an affected person may not have the means to obtain or utilize the resource reliably, which may result in adverse social or emotional effects. For example, in a study by Alix Gould-Werth and colleagues (2018), transportation insecurity has several main symptoms, such as social isolation, worrying about transportation; spending long-time planning, waiting, and traveling; skipping trips, and being late to important things. With that said, there are many ways that disadvantaged and marginalized communities contest the programs and ideas of urban planners, such as constructing informal infrastructure. By creating informal infrastructure, people cope with their transportation situation and take on the role of providing mobility themselves and helping other people in the same situation (Bedi 2016; Chelcea and Iancu 2015; Uzzell 1987; Yarrington 2015; Zhang 2016). This action mitigates the effects of the transportation insecurity and produces a system that makes up for their lack of transportation

access, such as work opportunities as parking attendants, or microbus drivers, or taxi drivers (Bedi 2016; Chelcea and Iancu 2015; Uzzell 1987; Wutich and Brewis 2014). The fact that people adopt new ways to receive and maintain mobility demonstrates their resistance to the politics that marginalize them, and their agency to respond to resource insecurity. However, sometimes people can cope with transportation insecurity situations just fine as the issues happen scarcely in their case. But the coping methods do not make up for the inaction by higher authorities.

Methodology

Recruitment

For my recruitment process, I used a short seven-question online screening survey through Survey Monkey to ask potential participants questions about their transportation situation and experience in San José, California. Primarily, I distributed this survey online through CommUniverCity at SJSU, with the help of Imelda Rodriguez, and my social media accounts. After I finished a couple of interviews, I asked subsequent interviewees if they were willing to send the survey to people they knew to gather more responses. In total, eighty-five people responded, but thirteen were chosen for an interview due to their responses suggesting transportation insecurity issues.

Sampling

In my study, I used purposive sampling to select participants that aptly express potential transportation insecurity based on their survey responses. Respondents were contacted to participate in an interview, if they answered that they could “afford transportation, but not their preferred mode”, “sometimes cannot afford transportation”, or “often cannot afford

transportation”. All thirteen participants showed evidence of transportation insecurity or concerns related to what they perceived to be inadequate transportation. Additionally, the thirteen San José residents represented a diversity of ethnic backgrounds, occupations, and genders around the downtown San José area. In return for the participants’ time and interview responses, I compensated them with a \$50 VISA gift card, funded by MTI.

Interviews

I conducted thirteen semi-structured remote interviews over ZOOM; each one lasted about 30 to 45 minutes and focused on the respondents’ transportation experiences before and during the pandemic. The interviews were recorded with the participants’ permission and later transcribed through Otter.ai services and revised by me. In these interviews, I asked the participants twenty-nine questions: eleven main questions and eighteen demographic questions. These questions can be categorized into four main information categories: general background information, daily pre- and inter-COVID-19 transportation experiences, pre- and inter- COVID-19 transportation insecurity coping strategies, and individual effects of transportation insecurity. This way I collected data on the importance of mobility for respondents, the methods and responses people have to move around in San José and beyond, and the extraneous factors that hinder a person’s transportation.

Data Analysis Methods

With the gathered data from the interviews, I did a set of inductive data analyses and used inductive techniques of theme identification (Ryan and Bernard 2003) to identify thematic patterns on people’s transportation and the effects of transportation insecurity. Specifically, I used Verbi Software MAXQDA to inductively code for major themes, such as experiences

and attitudes toward their current transportation situation, coping strategies, effects of their transportation, and the effects of COVID-19. I began my analysis by structurally coding each interview by speaker turn and by question. Then, I coded for main themes in transportation experiences by analyzing their primary mode of transportation, their access to amenities and services, and the resident's daily activities and transportation experiences. Following this first set of analyses with transportation experiences, I coded their coping mechanisms by analyzing their specific experience(s) where they were unable to go places, and the methods they used to deal with the issue. Afterward, I did my third and fourth analyses within the context of the inter-COVID-19 transportation experiences and coded for similar key points as the previous two. Then, in my last analysis, I coded for individual effects of transportation insecurity, such as the resident's perception and feelings about their past and current transportation access, and analyzed people's reactions to the sudden changes in their transportation. By analyzing the interviews in this fashion, the factors that contributed to transportation insecurity became easier to see, whether the factors were economic, social, mechanical, or political.

Thesis Format and Organization

This thesis consists of three chapters. In this first chapter, I explain the scope and theoretical background of the thesis. Chapter 2 is an article where I analyze people's experience with transportation insecurity in San José, the coping methods people use to deal with the issue, and the individual effects of transportation insecurity. Chapter 3 summarizes the results of my research from Chapter 2, discusses the broader impacts of my findings, and

provides directions for future research. The information on the field site and the details on ethnographic research methods and data analysis are provided in parts of Chapters 1 and 2.

Negotiating Transportation Insecurity: Local Responses and Coping Strategies in San José, CA

Abstract

Transportation insecurity causes adverse effects on people's lives by limiting access to opportunities and resources. Understanding how people experience transportation insecurity in metropolitan areas may contribute to building a better transportation system. I conducted my research study by interviewing downtown San José residents and analyzing their stories on the effects of transportation insecurity and what they did to cope with the situation to move around San José. Findings suggest that people experience transportation insecurity as excess time consumption through congested traffic, convoluted schedules, and service complications, which causes worry, anxiety, and missed opportunities. Overall, my research shows why transportation must be considered and analyzed as an infrastructural component in a greater resource system. People's experiences and reactions allude to what could be improved in San José's transportation infrastructure.

Key Words: transportation insecurity, transportation infrastructure, transit deserts, resource insecurity

Introduction

Transportation is an important resource for modern life, which enables people to access food, money, healthcare, and social engagement. When transportation is inadequate, people face adverse effects and are often forced to find unorthodox or expensive ways to access the resources they need (Gould-Werth et al. 2018; Jiao and Dillivan 2013). In this study, I research how transportation insecurity—the lack of regular access to adequate transportation for a healthy and productive life (Chen et al. 2021)—affects San José residents and how

residents, in turn, cope with this issue. I carried out this study with two primary objectives: (1) To understand how people cope with transportation insecurity in an urban environment, and (2) To document local practices that enable residents to cope with transportation insecurity that may have the potential to inform urban planning and policy. My research also expands knowledge on the nature of people's choices for transportation and the human responses to resource insecurity more broadly. The concept of transportation insecurity I utilize to structure my study is derived from important anthropological studies on food and water insecurity, such as the work done by Amber Wutich and Alexandra Brewis (2014), to bring attention to the dynamics of transportation as a key resource for people's wellbeing.

Literature Review

The Importance of Human Mobility

Mobility is a key to people's well-being. Mobility refers to people's ability to move between and within different places, which has profound impacts on people's social, physical, cultural, and economic well-being. With that said, studies show that people who lack mobility are more likely to experience weakened social bonds, lack of access to healthcare and job opportunities, or less freedom to do what they want (Gaither et al. 2016; Roberts 2008; Sheller 2015; Yarrington 2015). Transportation systems that facilitate mobility are key ways to connect people to resources and social engagement that are vital for human survival and well-being (Cornelius et al. 2016). For example, public buses are a major social network for elderly people; the bus acts as a meeting point and a symbol of independence and provides a service to take these people to the places they need to go (Roberts 2008). Additionally, transportation is part of a key to access healthier food for university students as

many students mentioned transportation as a barrier to accessing food, which often resulted in students buying cheap and unhealthy food in bulk from places nearby (Henry 2017).

In general, adequate transportation is hard to conceptualize due to multi-faceted factors such as people having varying demands for different transportation modes to travel around a city and requiring access to different infrastructures (Jiao and Bischak 2019). But people experience transportation insecurity due to a lack of access to transportation that can take them to places in a safe and timely manner (Gould-Werth et al. 2018). As a result, transportation insecurity limits people's access to jobs, schools, and social events, especially for vulnerable populations such as disabled and elderly people, regular medical patients, low-income communities, and peripheral neighborhoods (Cornelius et al. 2016; Firat 2016; Jobson 2018; Roberts 2008). When people cannot access adequate transportation for places beyond walking distance, they are often forced to turn to alternative sources of mobility such as relying on friends or family (Gaither et al. 2016) or rideshare options, which can be less reliable and more expensive to use. While scholarly knowledge of transportation insecurity is quite nascent, especially within urban metropolitan areas, additional literature on resource insecurity and the political economy of transportation and urban planning provides a window of possible interactions.

The Politics of Transportation Infrastructure

Lack of mobility is both a cause and symptom of transportation insecurity. In many cases, transportation infrastructure is at the center of transportation insecurity, especially for those that rely on public transportation for daily activities. Infrastructure refers to fundamental systems or networks that support the distribution or access of resources in an area (Larkin

2013). Transportation systems, like other infrastructural systems, are heavily connected to politics (Larkin 2013). First, politics has a major role in the development and construction of transportation infrastructures, such as policy makers' decisions on unprotected painted bike lanes in Philadelphia or government elites using transportation development to show off state power in Haiti (Fleming 2016; Sheller 2015; Yarrington 2015). Second, political processes allocate the amount of support and funds a transportation infrastructure receives, such as the municipal government providing an extra 700 taxis as an attempt to solve taxi demand in Guangzhou and different policy priorities diverting attention and resources away from improving well-patronized systems in transit-dependent areas (Garrett and Taylor 1999; Zhang 2016). And third, political perspectives, affiliations, and institutions contribute to the perception of transportation systems, such as a transportation policy reducing bus connectivity and increasing independent car use in Atlanta or policies surrounding the Metro in Delhi representing middle-class ideals (Gaither et al. 2016; Sadana 2018). These processes have profound implications for the planning and design of transit systems. For example, Junfeng Jiao's and Maxwell Dillivan's (2013) findings suggest that transportation systems in major US cities tend to be in "hub-and-spokes" layouts where the distribution of transportation supply is higher in the city's core areas and lower in areas farther from the cores. This design may exacerbate transportation insecurity for people living beyond the downtown area as certain areas are more accessible than others.

Beyond planning and design, transportation infrastructure decisions often revolve around factors beyond maximizing transit access for residents. Government officials and policymakers may be seeking to recapture lost markets or support affluent communities

(Garrett and Taylor 1999; Sadana 2018). Other transportation-related decisions may be made according to preconceived notions of traffic, where planners make near-impossible schedules for public transportation drivers without knowing the reality of traffic and what the drivers go through, or spatial patterns and processes that reproduce racialized patterns of uneven impacts to people's transportation modes and mobility (Fleming 2016; Sheller 2015). As a result, low-income communities and communities of color are more often sidelined in public transportation planning and face disproportionate barriers to accessing adequate transportation (Sheller 2015; Yarrington 2015).

Transportation Insecurity as Resource Insecurity

Within anthropology, there is limited scholarship on transportation insecurity. But research studies on human responses to water and food insecurity provides a framework for understanding how people may experience and respond to inadequate transportation. Amber Wutich and Alexandra Brewis (2014) outline a framework for anthropologists to understand and investigate resource insecurity more broadly and for comparing human responses to different types of resource insecurity. The framework advocates for a tripartite reckoning with resource insecurity as: (1) structural factors that cause certain populations to be more vulnerable than others to resource insecurities; (2) coping mechanisms at the household level that people enact to acquire the resources they need when resources are not adequate; and (3) individual impacts or effects of resource insecurity on biological and mental health and well-being. This framework demonstrates why resource insecurity is difficult for individuals to navigate; since people who experience resource insecurity may not have the means to obtain or utilize the resource(s) without a compromise. For example, in Vietnam, people had a well-

regarded government-run water infrastructure, but continuous neglect of the system made the water infrastructure dilapidated and greatly disliked by the affected citizens since their access to water deteriorated (Schwenkel 2015). In addition, people may face adverse social or emotional effects when attempting to cope with resource insecurity, such as social isolation, worry, and stress (Gould-Werth et al. 2018). Thus, the greater resource system requires attention from researchers addressing the causes and effects of transportation insecurity.

Ethnographic literature points to many ways that disadvantaged and marginalized communities may work to contest the programs and ideas of urban planners and build transportation that better suits their needs, which is an important complement to the greater resource system framework mentioned previously. People may construct informal infrastructure to cope with a lack of public transportation and take on the role of providing mobility to community members in the same situation (Bedi 2016; Chelcea and Iancu 2015; Uzzell 1987; Yarrington 2015; Zhang 2016). In a few cases, people alleviated their lack of transportation resource access themselves by creating businesses and developing work opportunities as parking attendants, microbus drivers, or taxi drivers (Bedi 2016; Chelcea and Iancu 2015; Uzzell 1987). The fact that people adopt new ways to receive and maintain mobility demonstrates their resistance to the political processes that marginalize them, and their agency to respond to resource insecurity. Yet, understanding the larger structural barriers people face in trying to obtain the mobility they need, how they cope with these barriers to their transportation and mobility needs, and the effects these may have on their lives requires further research. Understanding the lived experience of transportation insecurity, especially in the context of other resource insecurities, can provide information

that may help inform the planning and design of more equitable and effective transportation systems.

Methodology

Research Site: San José, CA

Downtown San José was chosen as the research site for several basic reasons, besides being located in the San Francisco Bay Area. First, according to the United States Census Bureau (2021), San José is the tenth-largest city in the US by population. Second, San José offers various ground transportation options, such as Caltrain, ACE/Capitol Corridor/AMTRAK trains, VTA bus, VTA light rail, BART, bike lanes, and alternative private transportation services; yet many people rely on cars to get around, according to the Commute Duration Mapping website on Santa Clara County (Litman et al. 2021). Third, despite all of these modes of transportation, there is an inequality between car use and public transit use especially in work commutes (Kawabata and Shen 2007). Fourth, I am a resident of the San Francisco Bay Area and I used to regularly use public transportation within San José. Lastly, San José District 3 (Downtown San José) was recommended by the Applied Anthropology department, which then I could receive help from CommUniverCity in terms of recruitment.

Research Questions

I designed this study to address three major research questions: (1) How do people experience transit insecurity; (2) How do people cope with transportation insecurity; and (3) What are the felt individual-level impacts of transportation insecurity. To answer these questions, I conducted in-depth ethnographic interviews with thirteen residents of San José,

California who experience transportation insecurity to varying degrees. Then, I analyze the interviews based on these research questions.

Recruitment and Sampling

To recruit participants, I used a short, seven-question online screening survey that asked San José residents about their transportation experiences. The survey was distributed widely via online listservs by CommUniverCity, a community engagement center at San José State University. The survey was comprised of seven questions that asked about people's transportation affordability, recent transportation limitations, the satisfaction of current transportation, the occurrence of change due to the COVID-19 pandemic, and reasoning for using transportation. Eighty-five people responded to the screening survey. Out of the eighty-five respondents, thirteen people were chosen for in-depth ethnographic interviews because they responded that they could "afford transportation, but not their preferred mode," "sometimes cannot afford transportation," or "often cannot afford transportation." These responses indicated that they potentially experienced transportation insecurity in some form. In return for the participants' time and information, I compensated them with a \$50 VISA gift card, funded by the Mineta Transportation Institute. The thirteen participants represent a diversity of ethnic backgrounds, occupations, and genders. I gave all participants pseudonyms in the reporting of this research to maintain their anonymity.

Data Collection

Due to the COVID-19 pandemic, I conducted interviews remotely via Zoom. I followed some of the best practices for Zoom interviewing, such as providing a direct link and starting the interview by going over the informed consent letter (Gray et al. 2020). Before asking any

interview questions, I asked for and received each participants' permission to record the interview. The interview protocol focused on the general location of these residents and their nearby amenities, their daily transportation experiences, the individual effects of their transportation situation, the importance of mobility in their lives, their responses to their current transportation system, and the actual methods they use to get around San José. After completing all of the interviews, I transcribed each interview using Otter.ai services and manually corrected any transcription errors.

Data Analysis

To facilitate analysis, I imported the data to Verbi Software MAXQDA and structurally coded each interview by speaker turn and interview questions. Then, I used Ryan and Bernard's (2003) techniques for theme identification to inductively identify and code themes about experiences and attitudes toward residents' current transportation situation, effects of the COVID-19 pandemic on their transportation use, and coping strategies for lack of transportation. This analysis strategy allowed me to identify the factors that contribute to transportation insecurity—including economic, social, mechanical, or political—and how residents respond to those factors.

Results

The results are broken down into three sections, each one correlating to my research questions. The first section discusses people's experiences with transportation insecurity. The second section reports on people's coping methods to deal with transportation insecurity. And the third section talks about the effects of transportation insecurity on a person.

How Do People Experience Transportation Insecurity?

Unlike rural areas with little transportation infrastructure, there are various transportation modes available in the downtown San José area. My participants explained that there was always at least one mode of transportation that they could use to reach their desired destination(s). However, the availability of transportation infrastructure did not mean that the transportation was adequate for their needs and daily lives. Participants overwhelmingly described transportation inadequacy in terms of excess time consumption. Due to conditions related to the transportation mode or infrastructure, their trips often consumed more of their time than necessary of their already-limited day. In conjunction, many residents felt that their transit situation was simply the "status quo" – that the transportation insecurity that they faced could not be helped, and their mode of transportation was their only option or that the other transportation options were veritably worse. This theme of transportation insecurity as excess time consumption manifested in three main ways across my study participants: (1) convoluted scheduling/planning, (2) congested traffic, and (3) service complications.

Downtown San José residents' experiences of transportation insecurity were generally less about their access to transportation and more about their transportation encompassing additional amounts of time in their already time-limited day. This could be seen in how residents had to schedule and plan their day around their transportation. Sara, a 51-year-old Latina pre-school teacher living close to San José State University, exemplified how, despite planning the route and scheduling the trip, her trip still took up a large amount of time to follow through. According to Sara, her morning commute schedule was "kind of a rush every day...." On a regular weekday, Sara had to drive her child to school in West San Jose and

drive herself to her workplace in Los Altos (a higher cost-of-living area) by 8:30 AM. This daily trip took approximately 75 minutes to complete one-way on Highway 280. First, starting at 7:00 AM, Sara had to drive about 11 miles from her home to drop off her child at school, which took her about 45 minutes. Then, Sara had to drive an additional 15.5 miles from her child's school to get to work, which took her approximately 30 minutes. Despite the trip duration, this schedule was Sara's best option because she calculated that if she wanted to avoid the morning car commute, she would have to take multiple buses and leave her home by 5:30 AM. In addition, Sara did not mention her morning pre-transit schedule or her post-work/school commute, but these situations would have contributed to her daily schedule. Overall, driving was seemingly Sara's best option since she found the driving schedule to be much better than trying to find a way to save extra commute time or avoid the car commute by bus.

While planning and scheduling took a large amount of time to complete a trip depending on the mode of transportation, the issue was fairly specific per person. However, congested traffic was a widespread condition that affected many participants in my study. Across the thirteen interviews, over half of the participants were primarily car drivers and they lamented traffic congestion as a major time-consuming issue several times. As result, traffic had a significant effect on a person's transportation, which can be seen in Eileen's recollection of traffic in her car commute in and out of Palo Alto. Eileen, a 41-year-old Brazilian woman living south of San José State University, explains that "... it was a nightmare early in the morning [and] coming back." This was due to fact that a traffic jam would leave her stuck on the road and, essentially, be parked for hours, when she could have been doing something

more productive instead. Eileen stated that she would "... rather be in a coffee shop and doing some work..." than deal with congested traffic to get home. This sentiment was shared by several other drivers as they did not want to waste their time with traffic. While not explicitly stated by Eileen, traffic caused worry as the situation made commuting longer and took up time from other important activities and tasks. However, the pandemic reduced traffic since fewer people needed to leave their homes, so many people felt that driving around San José had gotten better.

While congested traffic is the major time-suck for residents who drive cars, residents who rely on public transportation deal with service complications. Public transit service complications—such as late buses, accidents, or full capacity arrivals due to street congestion, peak service hours, or not enough drivers—hinder passengers since they have to adhere to the service schedule. According to Don, a 29-year-old Hispanic man living down the street from San José State University, bus service complications were not an uncommon occurrence. Don was a regular bus rider, so his schedule had to sync with the bus. However, there were moments with the bus that he could not control. For example, there were days where the bus came late, so Don was late for whatever he had planned. In addition, there were other times where the bus came earlier for some reason, so he missed that bus and was "... stuck at a bus stop [for] an extra 15 minutes, 20 minutes." On rarer occasions, the bus arrived on time but was at full capacity, so Don had to wait for the next bus. These service complications often made Don late for work, which caused him to worry about his employment status several times. With that said, service complications were exacerbated following the pandemic since public transit service times and carrying capacities were

reduced for health concerns. Overall, Don had experienced many service complications with the bus, which wasted his time and had made him late to work on several occasions.

How Do People Cope with Transportation Insecurity?

As hinted by the ways people experience time-consuming transportation insecurity, the way people coped with transportation insecurity in Downtown San José was instanced and impactful. However, each coping method potential had detrimental side effects based on a person's situation. While not everyone who used a coping method was affected by side effects, the chance of a negative effect was still there for many others. Additionally, the effects of the COVID-19 pandemic have changed how people cope with transportation insecurity in ways that may impact people even further than before. With that said, coping strategies for time-consuming transportation can be generalized into two main categories: changing the trip or using a different transportation mode. Within the two main coping methods, the situations where the methods would be used are infrequent or instanced.

While the coping methods that people used to deal with time-consuming transportation insecurity might be costly, sometimes the issue is resolved without taking up too much additional time. Mike, a 26-year-old Asian man living in East San José, highlighted how one could cope with service complications through using a different mode of transportation. For example, in Mike's trips to San Francisco from San José, he usually used three different modes of transportation, mostly public transportation, to reach his destination. But the issue was not the convoluted scheduling to get to the transportation hubs. Instead, there were several times where the bus broke down while trying to reach the Caltrain station, which made him late for the train. To cope with this issue and reach his destination on time, Mike

temporarily changed his transportation methods and solely used UBER to take him from San José to San Francisco. Mike explained that he decided to use UBER because he felt that all his available transportation options were used up when the bus accident happened. Because of the service complication and public transit's timed schedule, Mike would have wasted more time and been late for his activity if he continued using his regular transportation. In the end, Mike was able to reach his destination on time, but the trade-off was that he had to spend more money than he would have liked since UBER was not cheap for long distances. This coping method could be detrimental over time for Mike because he had a certain financial goal he wanted to achieve and maintain, so if he had to spend more money on transportation, then that would be a step backward for him. Overall, Mike's coping methods required more money to pull off without affecting his plans.

Sometimes the coping methods were simple but had a major impact. Steve, a 24-year-old Caucasian man living in downtown San José, exemplified how changing a trip to cope with convoluted scheduling had an impact on their life. In Steve's case, he had to go somewhere relatively far away from San José for a job interview. But Steve was at an impasse because he did not own a car; ridesharing was too expensive to go to the destination directly, and he was not comfortable using public transportation due to safety concerns and lack of experience. To make the trip, Steve would have to deal with a convoluted schedule of different modes of transportation, which would have taken the trip more time to complete. Instead, Steve decided not to go on that trip because the trip would take too long and chose to try again another day. In essence, Steve saved time that would have been consumed from using different transportation modes by not taking the trip, but at the trade-off of missing the

job interview, an economic opportunity, which could have been worth the time. While these moments did not happen often for Steve, the coping methods he chose to use caused him to miss out on an important event and forced him to plan better for future opportunities.

In the case of congested traffic, using a coping method to deal with this transportation insecurity could be difficult as traffic tended to be a constant issue. Sometimes, certain conditions had to be considered before executing a coping method, such as changing their mode of transportation. While changing or canceling the trip would cope with congested traffic, this method would be difficult to use if the situation arose during work-related trips. With that said, Aaron, a 58-year-old Asian-American man living in Downtown San José, best exemplified how dealing with congested traffic by changing their mode of transportation was impactful to their life. From the times Aaron had to drive home from work, he found that San José traffic after 2:30 PM was horrible. After dealing with traffic for a while, Aaron switched to primarily use Caltrain since he had the resources to do so. As a result, Aaron did not need to worry about his time being wasted from traffic and was allowed to do other things on Caltrain like getting some work done or relaxing with the friends on the train. However, there were several drawbacks with switching modes of transportation, which ranged from the train schedule to service complications such as trespasser incidents or max capacity train cars. In Aaron's case, this method showed that the positives outweighed the negatives, except he exemplified someone who was able to not experience transportation insecurity because he had the means to afford to switch to an alternative more permanently. Many people might not be able to afford to constantly use Caltrain, so they would have to stick with their car and sit

in traffic. Essentially, this coping method of permanently switching transit modes was not available to many people due to a lack of financial resources.

However, coping with congested traffic, especially for work trips, has changed dramatically since the onset of the COVID-19 pandemic. There was less of a need or expectation for people to leave their houses since many people could work from home. But even those who worked from home still needed to leave the house occasionally, such as Alice, a Vietnamese woman in her 30's living in San José Japan town, and Ernest, a 27-year-old Asian-American man living in East San José. Both Alice and Ernest found that driving was much easier because there was less congested traffic around the city. As a result, the pandemic inadvertently reduced the need to cope with traffic congestion and placed more conditions on public transportation which exacerbated service complications, similar to what Don experienced. In short, coping with congested traffic has decreased during the pandemic, but would likely increase as more people are required to return to work in person.

What Are the Individual Effects of Transportation Insecurity?

Transportation insecurity affected more aspects of a person's life than just the trip itself, at least for the people that lived in metropolitan areas. When people experienced transportation insecurity and their mobility was disrupted, a person may have felt the effects in different ways and intensities. While people felt these effects from an economic or social standpoint (such as missing a day's pay or missing the chance to see a friend after a long time), the results of these incidents caused feelings of worry or distress which had an impact on a person's quality of life. These effects included feeling worried about transportation or their job, and feeling distressed over not being able to see people. Additionally,

transportation insecurity may have led to feelings of shame or embarrassment. In this case, someone might have felt ashamed about their mode of transportation and not use their transportation mode because they were afraid of other people's perceptions of them. In addition, the COVID-19 pandemic had only increased these feelings of worry or distress, especially for those that regularly used public transportation. The pandemic had left a major impact on people psychologically as several people used public transportation again and had to worry more about the people around them, their health, COVID-19, and the prerequisite items to keep them safe. In general, transportation insecurity deeply affected a person's emotions and perceptions of transportation, the trips they take, and important parts of their lives negatively. For researchers and policymakers, understanding these individual-level effects of transportation insecurity could help improve the transportation system and potentially push people to consider other options.

As previously mentioned, the pandemic has changed transportation for many people, especially for those that rely on public transportation. For example, Mira, a 40-year-old housewife living in East San José, has been heavily affected by the pandemic. The pandemic has caused Mira to suffer emotionally and socially due to general fears and agitation about public transportation service complications, which has reduced her opportunities for social activities. For context, Mira has muscular dystrophy and used a power chair and the bus to get around normally, so her mobility was very limited. While Mira did have family that could drive her around, the bus had a special function of being a symbol of normality. Back when Mira was still able to use the bus, she often enjoyed using the bus "...to go to the mall, see friends, go to the movies, and to just go outside..." because the bus gave her "...the freedom

to feel a little bit more normal...” since she could “...see different people in places, hear them talking, and all that.” Following the effects of COVID-19, Mira’s transportation insecurity worsened as a result since she could no longer use the bus and go out to the places she wanted and spend time in a social environment. There was even a moment when the pandemic had just started where the bus Mira usually took did not stop for her and she had to wait a long time for the next one. Due to the pandemic and service complications, Mira felt depressed, sick, and anxious from being inside all of the time, and felt worried about the state of the pandemic and the possibility of getting the disease from other people on the bus. As the pandemic progressed and things continued to be unstable, the more this situation affected Mira and possibly others like her. In light of enjoying the bus, Mira did not feel any shame from using the service as the bus helps her feel normal. Overall, the COVID-19 pandemic has cultivated Mira’s transportation insecurity and personal insecurities because she could not go to the places she used to and was concerned for her health.

But even without the pandemic, time-consuming transportation insecurity contributed to a person's worries beyond their own needs. Millia, a 43-year-old Mexican American woman who lives in South San José, exemplified how congested traffic contributed to an additional set of worries beyond time. In Millia’s situation, she felt that using her car to get to work was her only option because using her bike did not feel safe and the bus was too limited in its hours and took longer to get to work. This choice has led Millia to decide to deal with traffic and stay on the road for a long time, which caused her to worry. Surprisingly, the worry that Millia felt was less about the personal time wasted and more about the environmental impacts and her carbon emissions from driving her car. The longer she was stuck in traffic

with her car, the more she worried about her carbon emissions. Due to her feelings of worry, Millia wanted to reduce her car use, but the transportation alternatives had trade-offs that were not worth taking. In conjunction, Millia wanted a more walkable and bikeable neighborhood, so she could use her bike without worrying about her safety due to unprotected bike lanes or fast cars. With that said, the pandemic seemed to have alleviated some of her worries because Millia could work from home, which drastically reduced the need for her to drive – by at least 75%. When Millia did drive, she found the activity to be more enjoyable and easier because there were fewer people on the road and less traffic. But at the same time, the pandemic reduced her already-low usage of public transportation out of fear of the virus. In general, the compounded effects of congested traffic and pollution produced from cars had caused Millia to worry about her carbon emissions and her impact on the environment, which has partially subsided due to the pandemic.

Lastly, as mentioned throughout the paper, excess time consumption was a transportation insecurity issue that caused worry because people were either late or had to cancel their trip, which was partly due to the reliability of certain modes of transportation. George, a 26-year-old White man living south of San José State University, exemplified the worry felt by dealing with a convoluted schedule due to the reliability of his decisions for transportation. In George's case, whenever he wanted to go somewhere that was not work, he asked his friends for a ride, at the cost of following his friend's schedules, since he did not drive or use public transportation. As a result, there were times where he had to worry about how he was going to get somewhere or had to worry if someone cancels since if someone canceled he would have wasted a bit of time preparing for his trip. At that point, George had to spend time in the

cycle of worrying about how to get to the place and worrying about his friend's schedule. But that was not to blame his friends, as George mentioned, his friends had their own lives and things happened, so the situation cannot be helped since George was the one who chose to ask his friend for a ride. Because of these conditions, George mentioned that he read a study that the world is built for cars and was disappointed that there were not many alternatives. With that said, the pandemic decreased his worries about transportation since there was less expectation and pressure to go to places. In the end, George's transportation choices had made him worry about how he would get to places since he often relied on other people's schedules, but those worries diminished as the pandemic persists.

Discussion

To summarize, there are four main themes across these interviews: (1) Regardless of a person's transportation modes, they often experienced transportation insecurity as excess time consumption; (2) Most people's coping method for transportation insecurity revealed that coping was situational, but required impactful changes to transportation that caused cascading effects; (3) Excess time consumption due to inadequate transportation often caused worry about how someone would get to their destination without cutting into their activities; and (4) The COVID-19 pandemic affected everyone's mobility and changed the time use in transportation. These results suggest that metropolitan transportation insecurity is a precarious concern that people are accustomed to. However, compounding factors make inadequate transportation tiresome to deal with. Generally, for many residents in downtown San José, transportation insecurity is a minor-to-moderate issue that annoys some people (at best) and temporarily hinders others (at worst). While people can cope with these situations,

at the cost of shifting transportation or plans, changes in transportation plans can have ripple effects in people's lives that can cause anything from canceled plans with friends and loved ones to lost job opportunities. During the COVID-19 pandemic, transportation has been pushed to two extremes, where some residents say there is no issue with transportation and others say their main transportation is no longer viable. Overall, these results show that Downtown San José residents experience a lack of adequate transportation as time-consuming transportation. The extent to which they can manage this excess time consumption is largely determined by the other resources that they have available to them. Nonetheless, the excess time consumption caused by a lack of adequate transportation is an issue that residents wish they did not have to deal with. People should not have to deal with excess time loss at the expense of their limited hours and additional resources because transportation already requires time and money to use.

These results imply that, at least in a US metropolitan area, people experience transportation insecurity because their available transportation takes up more time than necessary to complete. This is important because people's days are already packed with other responsibilities and activities, so any time loss is an infringement on their personal time. This can lower their quality of life as they have to spend more time worrying, stressing, and exhausting themselves to deal with congested traffic, convoluted scheduling, and service complications that are not healthy or productive for anyone (Gould-Werth et al. 2018). Being stuck in traffic means more time spent on the road and less time doing the things that people want and need to do. This situation causes exhaustion and frustration over time. Even the

coping methods that people use should not have to be drastic or expensive, yet an additional issue in the transportation system causes them to be that way.

The findings from my research also revealed many people's transportation as unimodal, which may be a major contributor to the transportation insecurity people face, at least in a metropolitan setting. While unimodal transportation is not a fault of the person, transportation politics limits what people can or want to use. The effects of these transportation policy choices can be seen in the ways people choose to use cars or cope with transportation insecurity by not taking the trip, despite many people wishing to use other modes of transportation or the reason for the trip being somewhat important. As a result, this situation raises questions, such as "How does politics build and perpetuate this unimodal transportation system?" and "How does transportation play a role in alleviating other resource insecurities?". This is to say that transportation is part of a greater, intertwining resource system that politics, along with other factors, influence what transportation people use in terms of cost, time, and availability, which in turn affects people's choices for resources such as food, work, or leisure.

However, with these glaring time issues with transportation, other suggestions appear that can help improve transportation for everyone. These changes can be, but are not limited to, expansion of public transportation systems (in destinations and in times available), more urban development for walkable/bikeable neighborhoods, or more use of multi-modal transportation (Gaither et al. 2016; Jiao and Bischak 2019). Many studies demonstrate ways that these infrastructural developments will likely reduce automobile traffic, increase foot traffic, and bypass peak congestion times. Although, the development of these infrastructures

alone will not alleviate transportation insecurity in an equitable manner. Public transportation would need to have better access and reach, especially for underserved and marginalized communities and neighborhoods (Jiao and Dillivan 2013); as well, the service needs to be more appealing to use over personal vehicles. In conjunction, walkable/bikeable areas require massive changes that are difficult to get passed since many cities already have limited spaces (Loutzenheiser 1997; Sheller 2015). Also, multi-modal transportation would have to deal with potential schedule and service issues (Jiao and Bischak 2019). Nonetheless, the aforementioned changes to transportation infrastructure may have the potential to alleviate time consumption by reducing time lost through reducing traffic or improving mass transit. Additionally, at least for public transportation, the future transportation systems have to be more reactive and resilient in the case of a public health emergency since several people stopped using public transportation due to fear of the disease and reduction in service. These suggestions are based on comments made by my participants on why they use certain modes of transportation over others despite the excess time loss.

In the end, San José residents face time-consuming transportation insecurity due to several factors that are embedded within the transportation system of San José and the broader South Bay Area. As a result, people often lose time of their day waiting or being on the road. This can have negative side effects on a person's quality of life as people would have to make time to deal with the time loss, so there would be less time to do things that they want. The side effects can be but are not limited to, worry about transportation, fear about the safety of transportation, or stress due to a combination of traffic and work. As previously mentioned, people should not have to deal with transportation taking more time

than necessary, especially when there are several transportation options available within the downtown area of San José. But the whole transportation system may need an in-depth overhaul to alleviate the root issues that cause the sources of time-consuming transportation insecurity in the first place, which may come sooner to public transportation as COVID-19 heavily affected their usage.

Conclusion

Transportation insecurity is a complex issue due to the numerous factors and conditions that contribute to a lack of adequate transportation. However, by examining people's experiences, coping methods, and individual effects of transportation insecurity, I am better able to identify solutions that address people's lived experiences. Lack of adequate transportation in a major metropolitan area appears to be a constant issue that people become accustomed to. They are most often able to get to where they want to go with one main transportation mode but lose time for other aspects of their life. This time loss has the potential to instigate cascading negative effects ranging from lost economic opportunities to worry and mental distress. On a related note, the way people cope with transportation insecurity is mostly independent and instanced. Most participants used one of three coping methods to deal with their issue: (1) no change in transportation mode; (2) use a different transportation option; and (3) cancel their trip, call off work or reschedule their trip, and stay home for the day. People's ability to cope with transportation insecurity is thus largely tied to the ability to marshal other resources and social connections, whether the resource is money to call an Uber or a friend with a car to call for a ride. This finding is consistent with ways that people cope with other resource insecurities, like food and water, and highlights ways

that transportation insecurity is likely to have disproportionate negative impacts on lower-income people and communities.

Overall, my research shows why transportation must be considered and analyzed as an infrastructural component in a greater resources system. People need transportation to access resources and opportunities that are important for a person's livelihood and well-being. When transportation is inadequate, the coping mechanisms that people use temporarily solve the issue, but sometimes at the cost of excess time burdens, stress, and worry. The task of alleviating transportation insecurity is arduous and requires more than a limited study on people's transportation experiences. However, this is a start to understanding ways to create a transportation system that is more inclusive and prepared for anyone that may need such a service.

Works Cited

- Bedi, Tarini. 2016. "Taxi Drivers, Infrastructures, and Urban Change in Globalizing Mumbai." *City & Society* 28 (3): 387-410. doi:10.1111/ciso.12098.
- Chelcea, Liviu, and Ioana Iancu. 2015. "An Anthropology of Parking: Infrastructures of Automobility, Work, and Circulation." *Anthropology of Work Review* 36 (2): 62-73. doi:10.1111/awr.12068.
- Chen, Andy, Ilayda Karagoel, Noah Friedman-Biglin, and Dan Nathan-Roberts. 2021. "No Ticket To Ride: A Systematic Definition of Transit Insecurity." Paper presented at HFES 65TH Annual Meeting, Baltimore, MD, July 2021.
- Cornelius, Talea, Maranda Jones, Cynthia Merly, Brandi Welles, Moira O. Kalichman, and Seth C. Kalichman. 2016. "Impact of Food, Housing, and Transportation Insecurity on Art Adherence: A Hierarchical Resources Approach." *AIDS Care* 29 (4): 449-57. <https://doi.org/10.1080/09540121.2016.1258451>.
- Firat, Bilge. 2016. "'The Most Eastern of the West, the Most Western of the East': Energy-Transport Infrastructures and Regional Politics of the Periphery in Turkey." *Economic Anthropology* 3 (1): 81-93. doi:10.1002/sea2.12046.
- Fleming, Mark D. 2016. "Mass Transit Workers and Neoliberal Time Discipline in San Francisco." *American Anthropologist* 118 (4): 784-95. doi:10.1111/aman.12683.
- Gaither, Cassandra Johnson, David Himmelfarb, Sarah Hitchner, John Schelhas, J. Marshall Shepherd, and Binita K.C. 2016. "'Where the Sidewalk Ends': Sustainable Mobility in Atlanta's Cascade Community." *City & Society* 28 (2): 174-97. doi:10.1111/ciso.12077.
- Garrett, Mark, and Brian Taylor. 1999. "Reconsidering Social Equity in Public Transit." *Berkeley Planning Journal* 13 (1): 6-27. <https://doi.org/10.5070/BP313113028>.
- Gould-Werth, Alix, Jamie Griffin, and Alexandra K. Murphy. 2018. "Developing a New Measure of Transportation Insecurity: An Exploratory Factor Analysis." *Survey Practice* 11 (2): 1-28. <https://doi.org/10.29115/SP-2018-0024>.
- Gray, Lisa. M., Gina Wong-Wylie, Gwen R. Rempel, and Karen Cook. 2020. "Expanding Qualitative Research Interviewing Strategies: Zoom Video Communications." *The Qualitative Report* 25 (5): 1292-301.
- Henry, Lisa. 2017. "Understanding Food Insecurity Among College Students: Experience, Motivation, and Local Solutions." *Annals of Anthropological Practice* 41 (1): 6-19. <https://doi.org/10.1111/napa.12108>.

- Jiao, Junfeng, and Chris Bischak. 2019. *Understanding Transportation Related Infrastructure Access in 52 Major US Cities*. Report no. CM2-18. Austin, TX: Cooperative Mobility for Competitive Megaregions. <https://rosap.ntl.bts.gov/view/dot/41815>.
- Jiao, Junfeng, and Maxwell Dillivan. 2013. "Transit Deserts: The Gap between Demand and Supply." *Journal of Public Transportation* 16 (3): 23-39.
- Jobson, Ryan Cecil. 2018. "Road Work: Highways and Hegemony in Trinidad and Tobago." *The Journal of Latin American and Caribbean Anthropology* 23 (3): 457-77. doi:10.1111/jlca.12345.
- Kawabata, Mizuki, and Qing Shen. 2007 "Commuting Inequality between Cars and Public Transit: The Case of the San Francisco Bay Area, 1990-2000." *Urban Studies* 44 (9): 1759–780. <http://www.jstor.org/stable/43197658>.
- Larkin, Brian. 2013. "The Politics and Poetics of Infrastructure." *Annual Review of Anthropology* 42 (1): 327–43.
- Litman, Todd, Hilary Nixon, and Cameron Simons. 2021. "Commute Duration Mapping Dashboard." Accessed November 6, 2021. <https://sjsu-mupers.maps.arcgis.com/apps/dashboards/392edde4f2154ca78226fb81d97e40e3>.
- Loutzenheiser, David R. 1997. "Pedestrian Access to Transit: Model of Walk Trips and Their Design and Urban Form Determinants Around Bay Area Rapid Transit Stations." *Transportation Research Record* 1604 (1): 40–49.
- Roberts, Simon. 2008. "Putting Mobility on the Map: Researching Journeys and the Research Journey." *Ethnographic Praxis in Industry Conference Proceedings* 2008 (1): 202-17. doi:10.1111/j.1559-8918.2008.tb00106.x.
- Ryan, Gery W., and H. Russel Bernard. 2003. "Techniques to Identify Themes." *Field Methods* 15 (1): 85-109.
- Sadana, Rashmi. 2018. "'We are Visioning it': Aspirational Planning and the Material Landscapes of Delhi's Metro." *City & Society* 30 (2): 186-209. doi:10.1111/ciso.12163.
- Schwenkel, Christina. 2015. "Spectacular Infrastructure and Its Breakdown in Socialist Vietnam." *American Ethnologist* 42 (3): 520–34.
- Sheller, Mimi. 2015. "Racialized Mobility Transitions in Philadelphia: Connecting Urban Sustainability and Transport Justice." *City & Society* 27 (1): 70-91. doi:10.1111/ciso.12049.

Uzzell, Douglas. 1987. "A Homegrown Mass Transit System in Lima, Peru: A Case of Generative Planning." *City & Society* 1 (1): 6-34. doi:10.1525/city.1987.1.1.6.

United States Census Bureau. 2021. *2020 Census State Redistricting Data (Public Law 94-171) Summary File: 2020 Census of Population and Housing*. Report no. SFSRD/20-01. <https://www.census.gov/programs-surveys/decennial-census/about/rdo/summary-files.html#P1>.

Wutich, Amber, and Alexandra Brewis. 2014. "Food, Water, and Scarcity: Toward a Broader Anthropology of Resource Insecurity." *Current Anthropology* 55 (4): 444-68.

Yarrington, Landon. 2015. "The Paved and the Unpaved: Toward a Political Economy of Infrastructure, Mobility, and Urbanization in Haiti." *Economic Anthropology* 2 (1): 185-204. doi:10.1002/sea2.12024.

Zhang, Jun. 2016. "Taxis, Traffic, and Thoroughfares: The Politics of Transportation Infrastructure in China's Rapid Urbanization in the Reform Era." *City & Society* 28 (3): 411-36. doi:10.1111/ciso.12099.

Conclusion

My research aimed to contribute institutional and anthropological knowledge on transportation insecurity through an ethnographical study on people's transportation experiences in San José. The specific objectives of my research were to: (1) understand how people experience transportation insecurity in San José's Downtown Metropolitan area, and (2) discover local practices that residents use to navigate transportation insecurity. The overarching purpose of my project was to gain insight into the factors and situations that contribute to transportation insecurity and how the issue affects people, and to find weaknesses in transportation infrastructure to inform or improve urban and transportation planning for a more inclusive system. Based on these objectives, I gathered important information on people's experiences with transportation and transportation insecurity in San José. I provide a summary of my findings below.

Summary of Findings

In summary, I interviewed thirteen San José residents about their experiences with transportation in and around the downtown area. Based on their responses, Downtown San José residents did not live in a transportation desert by any means, but they did experience transportation insecurity somewhat frequently as a minor to moderate inconvenience, especially during work trips. Specifically, the transportation insecurity people primarily faced was excess time consumption. People often coped with this issue by begrudgingly waiting and taking their time in transit. However, there were several moments where a greater issue occurred on people's transportation mode that would take more time than usual to conduct their trip. In those cases, the participants decided to not go and stay home for the day or

temporarily used a different mode of transportation. In light of the straightforward coping strategies, my participants' methods did raise some questions on why they do not often use alternative modes of transportation to deal with the regular transportation insecurity like excess time consumption caused by traffic. To which many people responded that the alternative methods were either unavailable for those that relied on public transportation, or the alternatives were problematic for those that primarily used a personal vehicle. Yet, regardless of mode, people often felt worried and tired due to the time consumed during transit. While my participants' mobility was not often compromised, many of their transportation situations were precarious as their responses suggest that one major shift would be detrimental.

Unsurprisingly, the COVID-19 pandemic caused a great shift in everybody's transportation and exacerbated transportation insecurity for many people. While several residents were fortunate to work from home or already own a car, public transportation users were heavily affected by the reduction of service due to safety and health concerns. In this case, public transit users' transportation insecurity experience was mostly service complications, which consumed more of people's time since they had to follow stricter rules and schedules. In addition, many public transit riders had to deal with feelings of hesitation or fear due to COVID-19. As a result, there was a dichotomy of coping responses from public transit users; some continued to use the public transit and adapt to the new service times and restrictions, while others had started to use private vehicles more often. While the San José residents were able to at least continue their normal trips to an extent, the effects of transportation insecurity had left a major impact on these residents.

Transportation insecurity is interesting as several factors can develop transportation insecurity, even the issue itself can cause different transportation insecurity to some degree. The physical, social, and economic effects of transportation insecurity on a person can perpetuate other forms or effects of transportation insecurity by association. For example, there were cases where people rather use their car and ford the heavily congested traffic because the public transportation would take up even more time to get to where they need to go. Also, there were other cases where COVID-19 caused transportation insecurity through the fear of the disease, thus people hesitated to use public transit and reduced some people's usage of this transportation. In particular, this case had an extended social effect where people were more cautious towards other people that were on public transportation, even if public transportation was their original social connector. In conjunction, there were cases where the social perception of a mode of transportation affected the person's decision when experiencing transportation insecurity as several people would rather miss an economic or social opportunity than use an alternative transportation mode. The compounding factors of the pandemic and transportation insecurity had changed many parts of people's lives and caused them to do several things that could have been avoided but external factors directed them in their current decision-making plans.

Broader Impacts

In conjunction with the research being an ethnographic study, my findings have important applied considerations for policymakers, urban planners, and transportation officials in San José, US Metropolitan areas, and more; despite the study being small and nonrepresentative. While the degree of transportation insecurity varies between and within

cities (Jiao and Dillivan 2013), this does not mean there is no overlap in ways the system can change to improve people's quality of life. If anything, my study shows the interconnected relationship between people and transportation and the factors surrounding the overall transportation system that impacts time, mobility, and wellbeing. For example, aside from the bus being a social gathering point for elderly individuals (Roberts 2008), transportation has an inherent social sphere embedded in the system that carries influence in people's access to transportation through social perceptions affecting people's transportation decisions through their thoughts and feelings on particular transportation modes. In addition, transportation has psychological benefits for people, such as the bus making people feel "normal" like Mira, in Chapter 2, who has muscular dystrophy and has difficulty moving around. However, any changes to the current transportation system might be difficult to apply due to the ever-rising car-centric development plans. Regardless, analyzing people's experiences with transportation and the strategies they use to deal with transportation insecurity highlights the weak areas in a city's infrastructure as well as show what people would like from the existing infrastructure. My research demonstrates that the way people interact with spaces and transportation has changed, so changes must be made for these systems to sustain themselves for the future. This involves solving issues on time consumption, safety, affordability, convenience, and accessibility; but these issues cannot be completely solved without adjacent changes on each other. Considering the interconnectedness of a city's infrastructure network, any change or consideration to one system can change another system. This means that actions towards improving transportation can and should coincide with changes to improve the rest of the city's landscape. In short, my findings on transportation insecurity are not

mutually exclusive to San José as any city can stand to improve. If the city's spaces and amenities were more accessible, affordable, convenient, spacious, and safe for everyone; more people might be more content with where they live. However, there are several caveats, beyond the control of a city, transportation institution, or individual, that inhibit making these changes; but improving how people get around and how they interact transportation within the city space would be a decent place to start.

Limitations

There are several noteworthy limitations to this research study that are important considerations for future research on this topic. First, a major limitation was the relatively small sample size. While the research had enough participants to find some patterns, there were not enough participants for the research to be representative of the downtown San José area. This resulted in a lot of information and perspectives being left out. Another limitation was the sampling range, while I am grateful for the help from CommUniverCity, the recruitment mainly came from the downtown San José area. Information on transportation insecurity might have been very different if the recruitment was done further out from the downtown sphere. This assumption was based on Junfeng Jiao's and Maxwell Dillivan's work (2013) as they mentioned that transportation systems tended to condense in the downtown area and branch out from the center like a bicycle wheel's spokes.

In conjunction, there were also limitations in the interviewing process. Since I only speak one language and did not have the means to hire people that spoke the other major languages spoken in San José, the perspectives I received only tell part of the story on transportation in San José. In addition, the COVID-19 pandemic affected everyone, including myself, which

placed more limitations on my research than I would have liked as plans changed and got delayed. This resulted in limitations on recruitment and data collection since I could only do that online. But, by the time I reached the interview stage in my research, people were burnt out from constant ZOOM meetings and online surveys, so that potentially affected my potential participants. Additionally, since everything was online, I potentially missed participants if they did not have easy access to the internet or if they were not well-versed in using a computer. Lastly, the timing of my research was a major limitation because more people stayed home, so there was less traffic and fewer reasons for people to use transportation. Looking back, I may have been a bit too ambitious and should have focused on one mode of transportation for transportation insecurity considering the circumstances. But in the end, I still completed my research on transportation experiences and transportation insecurity in San José.

Recommendations for Future Research

Following the limitations, I have several recommendations for future research to take to avoid the shortcomings of my research. First, I recommend gathering a greater sample size. This way the area of study will be better represented and there will be more perspectives and information available to find additional patterns. Second, I recommend gathering as much relevant background information as possible on the city or district used for the study. By doing taking this step, the researcher will know the greater context of the area's situation, which the researcher can use to make better comparisons to people's transportation situations in other places. Third, I recommend focusing on a single mode of transportation for similar studies to examine specific transportation insecurity situations. Since there are many different

modes of transportation, gathering information on all the different transportation modes for one study can be complex and time-consuming. This way the researcher's study will be more streamlined and in-depth, which can be beneficial in identifying more pertinent patterns or issues. Fourth, I recommend analyzing within and between groups of people in the study. This way researchers will have an easier time identifying and understanding the nuanced impacts of transportation insecurity.

In my research, I barely made any comparisons on the different transportation experiences between men and women or people of different ethnicities while in transit. The information is there in my study; but I did not draw that many connections between experiences, so I missed out on important patterns and information. Lastly, while my report does touch on the pandemic, an in-depth study on the effects of COVID-19 on transportation, especially on public transportation, will be very useful in understanding other forms of transportation insecurity and identifying what improvement can be made to transportation as the world moves post-pandemic. My recommendations will result in future research adding a better understanding of transportation insecurity in a metropolitan area and a more holistic insight into people's shared experiences on transportation.

Closing Remarks

Overall, this research study shows that transportation is an important resource for people's physical, economic, and social wellbeing. At the same time, transportation insecurity is a constant presence that people just deal with as another part of their regular lives, despite taking up more time than necessary for a trip. However, the San José residents that I interviewed do not live in a transportation desert as they can continue to go to the

places that they need to, albeit sometimes slower than they would like. Following the COVID-19 pandemic, everyone's transportation experiences changed; but this event highlights many important factors for the future of transportation to consider, such as safety, cleanliness, and convenience. In addition, this study provides cases where transportation is a major social icon that often influences the use of certain transportation over others if they have the means to do so. Despite my findings, solutions to transportation insecurity are difficult and require a better understanding of the interwoven infrastructure of the city. In the end, my study contributes to anthropological knowledge on people's experiences and feelings about transportation and transportation insecurity within a metropolitan area and contributes to institutional knowledge on the transportation insecurity factors and the potential conditions for better and more inclusive transportation infrastructure.

Cumulative Works Cited

- Bedi, Tarini. 2016. "Taxi Drivers, Infrastructures, and Urban Change in Globalizing Mumbai." *City & Society* 28 (3): 387-410. doi:10.1111/ciso.12098.
- Chelcea, Liviu, and Ioana Iancu. 2015. "An Anthropology of Parking: Infrastructures of Automobility, Work, and Circulation." *Anthropology of Work Review* 36 (2): 62-73. doi:10.1111/awr.12068.
- Chen, Andy, Ilayda Karagoel, Noah Friedman-Biglin, and Dan Nathan-Roberts. 2021. "No Ticket To Ride: A Systematic Definition of Transit Insecurity." Paper presented at HFES 65TH Annual Meeting, Baltimore, MD, July 2021.
- Cornelius, Talea, Maranda Jones, Cynthia Merly, Brandi Welles, Moira O. Kalichman, and Seth C. Kalichman. 2016. "Impact of Food, Housing, and Transportation Insecurity on Art Adherence: A Hierarchical Resources Approach." *AIDS Care* 29 (4): 449-57. <https://doi.org/10.1080/09540121.2016.1258451>.
- Firat, Bilge. 2016. "'The Most Eastern of the West, the Most Western of the East': Energy-Transport Infrastructures and Regional Politics of the Periphery in Turkey." *Economic Anthropology* 3 (1): 81-93. doi:10.1002/sea2.12046.
- Fleming, Mark D. 2016. "Mass Transit Workers and Neoliberal Time Discipline in San Francisco." *American Anthropologist* 118 (4): 784-95. doi:10.1111/aman.12683.
- Gaither, Cassandra Johnson, David Himmelfarb, Sarah Hitchner, John Schelhas, J. Marshall Shepherd, and Binita K.C. 2016. "'Where the Sidewalk Ends': Sustainable Mobility in Atlanta's Cascade Community." *City & Society* 28 (2): 174-97. doi:10.1111/ciso.12077.
- Garrett, Mark, and Brian Taylor. 1999. "Reconsidering Social Equity in Public Transit." *Berkeley Planning Journal* 13 (1): 6-27. <https://doi.org/10.5070/BP313113028>.
- Gould-Werth, Alix, Jamie Griffin, and Alexandra K. Murphy. 2018. "Developing a New Measure of Transportation Insecurity: An Exploratory Factor Analysis." *Survey Practice* 11 (2): 1-28. <https://doi.org/10.29115/SP-2018-0024>.
- Gray, Lisa. M., Gina Wong-Wylie, Gwen R. Rempel, and Karen Cook. 2020. "Expanding Qualitative Research Interviewing Strategies: Zoom Video Communications." *The Qualitative Report* 25 (5): 1292-301.
- Henry, Lisa. 2017. "Understanding Food Insecurity Among College Students: Experience, Motivation, and Local Solutions." *Annals of Anthropological Practice* 41 (1): 6-19. <https://doi.org/10.1111/napa.12108>.

- Jiao, Junfeng, and Chris Bischak. 2019. *Understanding Transportation Related Infrastructure Access in 52 Major US Cities*. Report no. CM2-18. Austin, TX: Cooperative Mobility for Competitive Megaregions. <https://rosap.ntl.bts.gov/view/dot/41815>.
- Jiao, Junfeng, and Maxwell Dillivan. 2013. "Transit Deserts: The Gap between Demand and Supply." *Journal of Public Transportation* 16 (3): 23-39.
- Jobson, Ryan Cecil. 2018. "Road Work: Highways and Hegemony in Trinidad and Tobago." *The Journal of Latin American and Caribbean Anthropology* 23 (3): 457-77. doi:10.1111/jlca.12345.
- Kawabata, Mizuki, and Qing Shen. 2007 "Commuting Inequality between Cars and Public Transit: The Case of the San Francisco Bay Area, 1990-2000." *Urban Studies* 44 (9): 1759–780. <http://www.jstor.org/stable/43197658>.
- Larkin, Brian. 2013. "The Politics and Poetics of Infrastructure." *Annual Review of Anthropology* 42 (1): 327–43.
- Litman, Todd, Hilary Nixon, and Cameron Simons. 2021. "Commute Duration Mapping Dashboard." Accessed November 6, 2021. <https://sjsu-mupers.maps.arcgis.com/apps/dashboards/392edde4f2154ca78226fb81d97e40e3>.
- Loutzenheiser, David R. 1997. "Pedestrian Access to Transit: Model of Walk Trips and Their Design and Urban Form Determinants Around Bay Area Rapid Transit Stations." *Transportation Research Record* 1604 (1): 40–49.
- Roberts, Simon. 2008. "Putting Mobility on the Map: Researching Journeys and the Research Journey." *Ethnographic Praxis in Industry Conference Proceedings* 2008 (1): 202-17. doi:10.1111/j.1559-8918.2008.tb00106.x.
- Ryan, Gery W., and H. Russel Bernard. 2003. "Techniques to Identify Themes." *Field Methods* 15 (1): 85-109.
- Sadana, Rashmi. 2018. "'We are Visioning it': Aspirational Planning and the Material Landscapes of Delhi's Metro." *City & Society* 30 (2): 186-209. doi:10.1111/ciso.12163.
- Schwenkel, Christina. 2015. "Spectacular Infrastructure and Its Breakdown in Socialist Vietnam." *American Ethnologist* 42 (3): 520–34.
- Sheller, Mimi. 2015. "Racialized Mobility Transitions in Philadelphia: Connecting Urban Sustainability and Transport Justice." *City & Society* 27 (1): 70-91. doi:10.1111/ciso.12049.

Uzzell, Douglas. 1987. "A Homegrown Mass Transit System in Lima, Peru: A Case of Generative Planning." *City & Society* 1 (1): 6-34. doi:10.1525/city.1987.1.1.6.

United States Census Bureau. 2021. *2020 Census State Redistricting Data (Public Law 94-171) Summary File: 2020 Census of Population and Housing*. Report no. SFSRD/20-01. <https://www.census.gov/programs-surveys/decennial-census/about/rdo/summary-files.html#P1>.

Wutich, Amber, and Alexandra Brewis. 2014. "Food, Water, and Scarcity: Toward a Broader Anthropology of Resource Insecurity." *Current Anthropology* 55 (4): 444-68.

Yarrington, Landon. 2015. "The Paved and the Unpaved: Toward a Political Economy of Infrastructure, Mobility, and Urbanization in Haiti." *Economic Anthropology* 2 (1): 185-204. doi:10.1002/sea2.12024.

Zhang, Jun. 2016. "Taxis, Traffic, and Thoroughfares: The Politics of Transportation Infrastructure in China's Rapid Urbanization in the Reform Era." *City & Society* 28 (3): 411-36. doi:10.1111/ciso.12099.