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The Untapped Potential of Ethnic Community Networks: Urban Resiliency and the Chinese Commuter Van System in New York City

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THE UNTAPPED POTENTIAL OF ETHNIC COMMUNITY NETWORKS: URBAN RESILIENCY AND THE CHINESE COMMUTER VAN SYSTEM IN NEW YORK CITY

by

ALEXANDRA DIANE SMITH

A master’s thesis submitted to the Graduate Faculty in International Migration Studies in partial fulfillment of the requirements for the degree of Master of Arts, The City University of New York.

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This manuscript has been read and accepted for the Graduate Faculty in
International Migration Studies in satisfaction of the thesis requirement for the
degree of Master of Arts.

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ABSTRACT

The Untapped Potential of Ethnic Community Networks: Urban Resiliency and the Chinese Commuter Van System in New York City

by

Alexandra Diane Smith

Advisor: Dr. Jeremy Porter, Ph.D.

Community resiliency begins at the local level. This explores the intersection of urban resiliency with the strength of community transit networks by evaluating the extensive Chinese immigrant inter-borough commuter van system in New York City. How should the city better empower and utilize existing immigrant transit and support networks in its strategic planning in response to disaster relief, recovery, and resiliency? More broadly, how can cities harness the realities of the 21st century - migration and climate change - and realize their potential to improve accessibility and reach in disaster relief? Better understanding the way the van system works within the community and links geographically distant neighborhoods underscores how immigrant neighborhoods bring different corners of the city together, which on a local level provides additional legitimacy to existing networks of support in migrant communities. I recommend that informality and im/migrant systems are recognized and supported through New York City's recovery and resiliency efforts of OneNYC, and as a model for other global cities, to embed supporting existing networks in im/migrant communities into disaster preparedness.
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CHAPTER I: INTRODUCTION

Urban informality, particularly urban informality in transit, has typically occupied a position of inferiority, liminality, and marginalization in U.S. cities. The Chinese "commuter van" system in New York City is no exception. A system of informal transit organized by and for the Chinese (im)migrant community in New York City with nearly a fifty-year history, the city's reception of the system has ranged from frequent ticketing and encounters with traffic law enforcement, to incorporation with serious limits to knowledge of the system's scope and scale. As the Chinese community in New York has grown and shifted, the system has expanded to connect central hubs of residential and commercial life, with knowledge of the system spread through word of mouth and Chinese-language media. What does its existence and long-term sustainability reflect about mobility and resiliency in the Chinese immigrant community, and what should informal transit's role be in evolving plans for mainstream transportation service in New York City? This thesis also seeks to set the foundation for an understanding of the opportunities of informality more broadly, looking to these systems as examples of the strength of migrant networks in urban settings, while being intentional to not disregard the systematic inequality that often leads to the need for informal solutions in the first place.

The vans express how the Chinese American community in New York mobilizes social capital, entrepreneurship, and resilience to fill the gaps for members of the city who are typically left behind by mainstream service: (im)migrants and seniors. While the Chinatown vans are largely misunderstood and ignored by city planners, I argue that by gaining a basic understanding of the system through a blend of qualitative and
quantitative methods, the community it serves and a theoretical exploration of its
existence, New York City can harness the realities of community strength to learn from
how informality functions in times of instability and crisis. Bringing together the
literature on informality, social capital, and community-based responses to urban
disasters sets the stage for this paper: I recommend that the City of New York incorporate
support and training of the van operators and dispatchers to improve accessibility and
responsiveness to community-based transit systems into its OneNYC plan for a more
equitable and resilient city.

The Chinatown vans are a system of semiformal transit produced and maintained
by and for the communities it serves, reflecting the socio-spatial dialectic that informal
transit embodies (Goldwyn 2017, 2018; Guest 2011; Reiss and Lavey 2017; Soja 1989).
The Chinese immigrant community, both nationally and in New York City, has grown
and evolved since the dismantling of the entrenched anti-Chinese racism in U.S.
immigration policy, initially during World War II, and in a dramatic way through the
Hart Cellar Act of 1965, removing the national origin quotas and race-based immigration
policies (Lee 2003). Much attention has been paid to the evolving role of Manhattan's
Chinatown as a historic hub of Chinese immigrant community networks, residential
spaces, and the ethnic economy (Guest 2011, Li 2005, Lin 1998, Ong et al 2013-2014,
developing centers of commercial and residential life for recent parts of the Chinese
diaspora in Brooklyn and Queens mean for the significance of traditional Chinatown
(Hum 2003, 2014). This thesis seeks to contribute additional perspectives on the
relational mobility between Chinatown and the outer boroughs through the Chinatown van system.

Though the vans are referenced using different names (Dollar Vans, Commuter Vans, Chinatown Shuttles, or Jitneys) and are part of a much larger network of informal transit across New York City and the surrounding area (Goldwyn 2017), I will continue to refer to them as 'Chinatown vans,' or simply just 'the vans,' specifically referring to the system of transit between Chinatown, Brooklyn (8th Avenue in Sunset Park), and Flushing, Queens. In the 1998 classic Reconstructing Chinatown: Ethnic Enclave, Global Change, Lin provides a concise overview of the van system and insight into rider preferences:

"Providing an alternative to the subway are informal minibus services that shuttle between outer-borough Chinatowns and Manhattan's Chinatown for about the price of a subway token, or slightly more. Usually not officially registered as buses, these large unmarked vans pick up commuters at familiar locations along major Chinatown thoroughfares such as Canal Street and whisk them back to outer-borough locations. Driving above ground, they are somewhat more comfortable than the underground subway ride and will generally deposit riders much closer to their actual place of residence than the subway, saving the rider some commuting time." (Lin 1998, p. 110)

The system has evolved since the time of Lin's writing, particularly following the system's gradual inclusion by the TLC in 2015.\(^1\) However, the formalization has only brought superficial understanding of the system and the communities it serves (Goldwyn 2017, 2018). This project attempts to address the following gaps in knowledge 1) around the community members served by the vans, 2) what their preferences can tell us about

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1 For more information about the "Dollar Vans" and its incorporation into the NYC TLC, visit the homepage here: http://www.dollarvan.nyc/. Accessed December 4, 2018.
2 The Chinese-American Planning Council (CPC) serves as a strong example of a direct service organization that responds directly to needs of the community as they emerge. Founded in 1965, CPC has
gaps in accessibility to the mainstream transit systems across the City, and 3) the opportunities to support and incorporate the vans in disaster relief and recovery scenarios.

The Chinatown vans are consistently acknowledged across studies of the Chinese community in New York, but little has been done to explore the details and opportunities for incorporation in either transit planning or urban resiliency efforts. In order to establish and evaluate the often distant research areas of neighborhood history, contemporary semi-formal transit patterns, and disaster relief, the review in the chapter that follows will explore each area separately before bringing them together in the discussion of the current state of the Chinatown vans and their potential for leveragability at the city level.

This thesis seeks to contribute a foundational understanding of the Chinatown vans while encouraging the city to examine its relationship with the system and explore potential incorporation into urban resiliency efforts. In the next chapter, this thesis will dive into existing literature to establish the theoretical framework of mobility, social capital of (im)migrant communities. This will provide the lens through which to interpret and present my survey methodology and findings.

In chapter three, I will discuss the spatial relationships between Chinatown, Flushing, and Sunset Park, beginning with the recent past of the role of the garment industry and an analysis of my survey findings. This chapter will present the survey collection process, key lessons from field notes, and statistical analysis of the findings on relationships between rider characteristics including: age; length of time in New York City; American nativity vs. immigrant identity; language preferences and literacy; and employment-residential transit needs. Chapter three will also discuss the partnership with
the Chinese American Planning Council (CPC), a direct service non-profit operating across the centers of Chinese American life in New York City. It is also critical to consider the challenges of survey collection and selection biases of respondents in this study.

Chapter four will leverage the survey responses and demographic overview of the community the vans serve to consider the feasibility of the systems' incorporation into urban resilience efforts, learning from failures and challenges of local responses to disasters in New York City's past. The chapter will then transition into recommendations to the New York City TLC and the Mayor's office of Recovery and Resiliency.

Finally, the thesis will conclude with recommendations for future research and potential for this research to be applied to other areas of informality, such as elderly can collectors/recyclers in Chinatown and other (im)migrant neighborhoods. Can marginalization and informal responses to gaps in mainstream systems be reframed and restructured to support and encourage informality to empower migrants and create more resilient cities?
CHAPTER II: LITERATURE REVIEW AND THEORY

I. Chinatown Literature

This project builds on existing literature on (im)migrant enclave communities and neighborhood formation in Chinese American history, adding nuance on the mechanisms of systems of support stemming from the historic hub of Chinatown. Given this project's focus on New York City and informal transit networks specifically, it is critical to consider additional discussion of centers of Chinese life in the outer-boroughs, specifically Flushing, Queens and Sunset Park, Brooklyn. I argue that while these sources are critical contributions to understanding the evolution of Chinese neighborhoods in urban areas like New York, the spatial dispersion and the semi-formal transit networks that link them shape the narrative of Chinatown from its history as a defense mechanism to its future of resilience and potential to contribute to a stronger New York.

How did Chinatown as a spatial and racial concept first begin? From its origin in the late 19th century, Chinatown served a space for protection and culturally familiar life to overseas Chinese in an area of the city to establish "social and spatial world" as a "sanctuary" in the midst of a hostile host society (Li 2005, p. 31). Yet external constructions of the community consistently linked urban communities of color with danger and undesirability. Commonly expressed sentiments in early years of increased immigration from the 18th-19th centuries, even suggested that quarantines be used in maintaining a division between those who belong and those who do not (Kraust 1995). These attitudes towards a community's majority immigrant status and class distinctions extend to our federal construction of the immigration process (through multiple health examinations for steerage only) as well as to attitudes around
"concentrations" of immigrant households seen as "marginal and potentially subversive" to the well-being of society, even to the extent that those who suffered most from disease and poor sanitary conditions were in turn blamed for introducing the health threats to the U.S. (Kraust 1995, p. 71). These views were applied to many immigrant groups during the late 19th century, including but not limited to "undesirable" groups like Italians and Eastern European Jews. The construction of physical and social difference as a threat to society connects to the construction of Chinatown in public memory during this period as well.

These perceived relationship between race and health construct Chinatown from the outside by mainstream white Americans, the effects of which still shape the ideas of Chinatown in the modern context. In Contagious Divides: Epidemics and Race in San Francisco's Chinatown, scholar Nayan Shah (2001) traces the term from this foundation of the concentrated settlement patterns of Chinese immigrants in the American West in the late 19th century, in the years leading up to the passage of 1875 Page Act and 1882 Chinese Exclusion Act. Shah describes how the term "Chinatown" divides a city's Chinese immigrant community their non-Chinese counterparts in the mainstream, as well as constructs the identity of Chinese in America as a racialized other:

"The generic naming of a Chinatown in some locations referred to a handful of buildings and in others to a set of streets. Although the physical boundaries of these 'Chinatowns' constantly shifted, the name signaled a potent racial designation of Chinese immigrant inhabitation. The cartography of Chinatown that was developed in government investigations, newspaper reports, and travelogues both established 'knowledge' of the Chinese race and aided in the making and remaking of Chinatown. The idea of Chinatown as a self-contained and alien society in turn justified the 'recurring rounds' of policing, investigation, and statistical surveys that 'scientifically' corroborated the racial classification." (Shah 2001, p. 18)
By linking the term Chinatown to a set of behaviors and living patterns seen as "deviant" and inherently un-American, the immigrant community came to directly "[connect] the Chinese race to place, behavior and cultural differences and framed the endurance of the Chinatown ghetto as a living repository of the strange, peculiar, and unassimilable" (Shah 2001, p. 20). Shah's detailed discussion of the categorization of Chinatown as a public health threat to white America provides a useful historical reference point from which we can explore how Chinatown and the networks that have grown from it expanded after the removal of exclusionary immigration policies and the communities grew. No longer confined by race and class to Chinatown as a historic hub, the cultural practices and community ties that once made Chinese (im)migrants "threatening" to mainstream white America should not be reframed and acknowledged by the city as a resource to be enhanced through supportive government practices.

Chinatown's role for more recent Chinese (im)migrants is evolving, as housing and commercial prices are rising, and other neighborhoods around the city offer more housing options and maintain a working class identity. Increasing numbers of newly-arrived immigrants are "leapfrogging" Chinatown, once the first stop for most immigrants (Lin 1998, p. 107). As characterized in Dr. Min Zhou's chapter on Chinese immigration in Nancy Foner's *One Out of Three: Immigrant New York in the Twenty-First Century*, "Brooklyn is the place to be" for new Chinese immigrants, for Manhattan is too crowded and Flushing too expensive (Zhou 2013, p. 137). The residential shift in Chinese immigrant settlement away from Manhattan's Chinatown is increasingly pressured by rising rent costs and hostile denial of maintenance and degraded living conditions by
landlords, even leading some tenants to hunger strikes to demand protection from the city (Cook 2018).

Despite these serious challenges to life in Manhattan's Chinatown, the neighborhood continues to be a cultural hub for work and life for modern Chinese immigrants (Guest 2011). Indeed, even in the Chinese names for each neighborhood, it's only Manhattan that bears the historic name "Chinatown" (Tang Ren Jie 唐人街), while Sunset Park and Flushing, both with high proportions of Chinese immigrant and Chinese American residents are referred to as Chinese "districts/areas" (Hua Ren Qu 华人区), by phonetic interpretations of their names, for example, simply "8th Avenue" (Ba Da Dao 八大道) the represent Sunset Park, the geographic hub of the Brooklyn Chinese community. Even in the minds of contemporary Chinese immigrants living elsewhere in the city, Chinatown remains a social, economic, and cultural center for the community, while maintaining connections between the boroughs continues to be essential to Chinese immigrant life in New York City. These connections can take the form of social networks, such as familial or village networks, employment opportunities, and housing options, as well as the physical connections reinforced by the commuter vans running between the boroughs' Chinese community centers, specifically designed as a linguistically and culturally accessible option for connecting the spatially distinct hubs across the city. This will be an interesting transition to watch in the future, as the movement towards the outer-boroughs deepens trends dispersing the community across the city, and even beyond traditional gateway cities like New York to more suburban areas (Li 2006, Skop and Li 2005, Chow 1999, Zhou and Logan 1995).
The contemporary shifts in (im)migrant origins are also necessary to understand the relationship of these three neighborhoods. In "From Mott Street to East Broadway: Fuzhounese Immigrants and the Revitalization of New York's Chinatown," Guest (2011) adds nuance to the diversity of origins within the extended boundaries of the traditional Chinatown in Manhattan. His work, using participant observations in New York City and several visits to Fuzhou, China, highlights the more recent immigrants from Fujian since the 1980s, a departure from the early waves of immigrants from Guangdong Province and Hong Kong. The group's center of life focuses around East Broadway, on the edge of Manhattan's Chinatown core. He describes how alongside the suburbanization of Chinese American populations after World War II, New York City's Chinatown continued to grow because of the replenishment of works drawn by social networks and employment in the restaurant and garment industries (Chin 2005). While most of Guest's research focuses on religious networks and transnational migrant ties, he presents the idea of the van system linking the recent arrivals with communities in Queens and Brooklyn, as well as the extensive interstate bus circuit linking recent (im)migrants with jobs in the ethnic-economy across the country. The mention of the vans is enough to raise interest in the role of informality and lack of accessibility in mainstream transit, though the primary analysis is limited to understanding the risk gentrification and displacement play in the decline of Chinatown's role as a starting point for Chinese in New York (Guest 2011). This project contributes to this insight by digging deeper into the role of informality in New York's Chinese American community.

Zhou and Logan (1991) provide an early look at the emerging relationship and demographic differences between Chinatown and other areas of concentrated Chinese
immigrant settlement, a helpful lens through which to examine the origins of the Chinatown vans. The study analyzed data on the residential segregation of Chinese communities in New York City as a case study to interpret the question: "to what extent are decentralization and suburbanization of the Chinese associated with lower levels of segregation?" (Zhou and Logan 1991, p. 387). The question challenges simplified conclusions like that of Massey and Denton (1987) that "Asians" have low rates of segregation: however, Zhou and Logan counter, saying it is only compared to the extreme of Black Americans, and also recognize the variety of experiences across "Asian Americans" (Zhou and Logan 1991, p. 389). Like Massey and Denton, who acknowledge lower rates of dissimilarity with whites simultaneously with rise in enclave formation in the 1970s-80s, Zhou and Logan also ask, "is participation in the enclave economy, and the ethnic social networks on which it is based, no obstacle to decentralization?" (Zhou and Logan 1991, p. 389). Their conclusion states that enclave participation and support networks appear to be voluntary, but not without the sacrifice of lower wages and exploitation: the study concludes with recommendations for future research on the existence of negative outcomes caused by enclave residential patterns (Zhou and Logan 1991, p. 405).

These studies stem from the rapid growth of the Chinese immigrant communities after the formal removal of a long legacy of Chinese Exclusion with the Hart Cellar Act in 1965, but much has changed since the late 20th century as the Chinese population has continued to grow, and traditional discussions of Chinatown as the center of ethnically Chinese life in New York City have evolved.
II. Enclaves and Mobility

While the vans often are thought of by non-Chinese observers as a transit solution for (im)migrant workers commuting from one of the outer-borough Chinese communities to Chinatown, my initial observations tell a more complex story of the mobility access the vans provide and the limitations of informal mobility.

It was on a cool and crisp Friday morning, I ventured down the Bowery in the Lower East Side of Manhattan to the van stop behind Confucius Plaza, a 1970s behemoth of a limited-equity cooperative housing. On the south side of the building on Division Street between Bowery and Market Street, a line of white vans are parked along the curb. This is the pick-up spot for the Chinatown-Flushing line. The van at the front of the queue was about half full when I sat down, and a middle-aged Chinese man was sitting across the aisle from me. We struck up conversation quite quickly: this led to another easy conversation with an Afghani woman who sat next to me.

Her story stands out in my hours spent riding the vans not only because she was the only person of non-Chinese ethnicity I encountered that entire day, but also because of a few details she shared with me. She had lived in New York for several decades, and had recently moved from Flushing, Queens to Chinatown, Manhattan. She described how much she enjoyed the diversity of Chinatown, stories lined with a warm smile and feeling of sincerity, connecting the everyday interactions she had with her Black, Puerto Rican, and Chinese neighbors, even just through simple encounters like a hello or a wave. She rides the vans mostly to get to Flushing to go shopping, since she prefers the Halal butchers there. She also described her comfort with the vans as a solution to avoid transferring lines in the subway: transfers specifically gave her a lot of anxiety, as she is
not able to read or write comfortably in any language (even her native language, Persian). The vans, in this case, provided a familiar and simple option for an individual with low literacy. Contrary to what I expected, it was not linguistic comfort with Chinese, as many respondents did indicate, but here the familiarity in informality and the discomfort with the mainstream services provided by the MTA.

Shopping was a theme that came up several times, and I noticed that even the individuals who declined participating in my survey, several had shopping bags of groceries and goods on the vans, regardless of origin-destination or route direction. This supports the idea of the vans functioning as a convenient line between the shopping hub and residences; however the Afghani woman I spoke with complicates that relationship by seeing Chinatown as her preferred residence because, as she described it, she can walk to her doctor's office and most things she needs, and yet much of her shopping can be found in Flushing. This separation of home and commercial resources between distant neighborhoods reflects the spatial relationship of each areas' specific purpose, and the site-specific associations of different neighborhoods. The van lines identify these roles by intentionally connecting these spaces as their roles emerge.

The responsiveness of the system to address these developments is critical: I noticed in my ride to Flushing from Sunset Park that there was a poster announcing a new $2 service from Flushing to Elmhurst, an emerging residential area of Chinese (im)migrant life. The vans are an informal entrepreneurial service that responds to growth in residential and community ties, and a shadow network of transit pops up to serve this need.
How do these field observations connect to early discussions of the residential mobility of Chinese Americans in New York City? When considering Zhou and Logan's 1991 study on Chinese immigrant residential segregation and ethnic economy in New York City, this thesis's discussion of mobility rejects the simplified conclusion that enclaves are a "given" that "cultural preferences" of Chinese immigrants through "voluntary choices [that] may not cause any disadvantages" (Zhou and Logan 1991, p. 405). Indeed, in Alba and Foner (2015), enclave residential patterns are overwhelmingly functioning as a "way station," in that they serve as residential support networks after migration, but within one generation economic, social, and residential mobility is the norm (Alba and Foner 2015, p. 69). Facing discrimination in the housing market and other barriers to "spatial assimilation" further emphasize the necessity and function of ethnic community formation and maintenance through immigrant replenishment (Massey 1985; Alba and Foner 2015, p. 70). Alba and Foner support the reframing of ethnic enclaves and migrant networks in positive terms: recognizing strengths of communities formed through migration, while acknowledging disadvantages and structural inequalities. Social capital, specifically formed through residential clustering and the networks facilitating the ethnic economy, settlement, and migration, can and should be viewed as an asset present in (im)migrant communities (Alba and Foner 2015, p. 71).

However, immigrant mobility must be also considered through the lens of "voluntary" immobility. Dr. Shaolu Yu's 2016 study examines the limitations of existing research on mobility, migration, and ethnic clusters, in that the field mostly focus on the socioeconomic mobility: Yu fills the gap in a conceptual discussion of "everyday physical mobility" (Yu 2016, p. 10). The distinction of mobility vs. immobility is "not
always due to lack of accessibility, but a result of structural barriers to resources in the broader society which lead to overdependence on local resources" (Yu 2016, p. 11). This study of fixity is further complicated by Yu's discussion of the Chinatown vans. However, Yu's sample is limited to Chinese who have migrated to the U.S. within the last fifteen years, who Yu rightfully claims would have significant barriers to mobility: my initial findings, however, highlight that the vans themselves are often used by a much more diverse set of riders, not limited by time living in New York City or nativity (to be discussed in future chapter of this thesis). In Yu's observations of "mobile resources," including the Chinatown vans, but provides a qualitative skim of the surface of what the system means to the broader Chinese community across the City (Yu 2016, p. 16).

III. Informal Transit and Immigrant Mobility

The existing work on the commuter vans, often referred to as "dollar vans," provides useful context on the fraught history of New York City's Taxi and Limousine Commission (TLC) and participants in the van system, partially explaining the dismal state of awareness of the role informality plays in transit across the city and the community it serves.

Goldwyn's work on van transportation and planning in New York City provides a good model through which to interpret my study on the Chinatown vans. Goldwyn researched the feeder vans on Flatbush Avenue in Brooklyn, primarily used by the West Indian (im)migrant population, to identify that vans have served as one community-based solution to a geographically specific problem: "adequate access to inadequate service" (Goldwyn 2017, p. 20). He determines that the vans are often a more reliable transit
option, when compared to the MTA buses, and a functional alternative for transit-dependent populations.

His conclusion that the lack of awareness of the MTA and TLC and the government's failure to create transit that reflects daily practice means a gap between practice and policy, jeopardizing the mobility of entire neighborhoods because of the constant reluctance to incorporate informality into planning alternatives: "it appeared that everything short of teleportation would be considered before anyone though to take advantage of an existing resource with a proven record of moving people, the vans."

(Goldwyn 2017, p. 2). Goldwyn also identifies that need to collect more information on van ridership, given that they are almost completely unknown by the city. Moreover, given that his research exclusively focuses on that of the feeder lines used in Flatbush, the Chinatown vans studied through this project are still significantly in need of research and further study, a gap specifically intended to be addressed by my study.

The specific cases of the vans in New York City fit into the larger field of informal transit. Blumenberg and Smart (2014) are the foundational voice on carpooling in (im)migrant neighborhoods, specifically leading into the discussion of transit and social capital. In "Brother Can you Spare a Ride? Carpooling in Immigrant Neighbourhoods," Blumenberg and Smart study patterns of transit use by immigrants living in immigrant neighborhoods, and specifically examine the impact of social networks in understanding travel behavior (Blumenberg and Smart 2014, p. 1872). Moreover, the significance of the enclave and ethnic settlement patterns cannot be separated from transit habits: "ethnic ties connect residents to adjacent jobs, services and retail opportunities. Consequently, residents of ethnic neighborhoods should exhibit
different travel patterns than would residents of other neighborhoods." (Blumenberg and Smart 2014, p. 1872) Blumenberg specifically points to the role of social capital in the formation of transit networks and carpools. The question of the trip purpose is also a significant starting point for this thesis: travel to and from work comprises less than 16 per cent of all trips in the US. Carpooling, as a result, is in fact even more likely to be relied on for socializing or shopping trips (Blumenberg and Smart 2014, p. 1876).

Travel behavior in (im)migrant communities is an example of how those left out of the traditional planning processes can shape mobility access in a way that specifically addresses the shortcomings of the mainstream system. However, it is important to also frame this community-driven solution as not just a simple formality-informality binary: as Douglass emphasizes in *The Help-Yourself City*, while certain solutions to urban problems are met with resistance by the formal system, there is a precedent for professional planners to "adopt their tactics, harness their energy, and exploit their cultural value" (Douglass 2018, p. 14). While noting the balance that can often tend towards exploitation, there is a critical need for cities to engage with informal solutions.

The question of the inequalities that lead to these gaps is not adequately explored, nor is the question of why mainstream service is not as likely to fit the needs of (im)migrant communities addressed. This thesis seeks to dig into these factors while shifting the discussion toward how informality can be incorporated into urban resiliency efforts.

**IV. Informality and Urban Resiliency**
In the existing body of knowledge around informality and disaster preparedness, migration tends to be framed a source of vulnerability. This thesis argues policymakers should view migration and (im)migrant communities as a strength and possible community-based solution, rather than a weakness, for urban resilience.

To begin, it is important to acknowledge that informality in American cities is often delegated to liminality and is rarely acknowledged as a valuable reality of urban systems. In Mukhija and Loukaitou-Sideris's *The Informal American City: Beyond Taco Trucks and Day Labor*, the idea of informality is address head on in the American context. To quote the opening idea framing the perspectives of the collected chapters that follow: "There is ample evidence that informality is an integral and growing part of cities in the developed world. Partly a result of globalization, deregulation, and increasing immigration flows, partly a response to economic instability and increasing unemployment and underemployment, and partly because of the inadequacy of existing regulations to address the complexity and heterogeneity of contemporary multicultural living, informal activities have proliferated in U.S. cities and are clearly reflected in their built environment" (Mukhija and Loukaitou-Sideris 2014, p. 1) Mukhijia and Loukaitou-Sideris not only contribute a more complex picture of informal economies, but also breaking away from the systems being viewed as chaotic. How can planners "respond to the emerging landscape" of this "informal revolution" (Mukhija and Loukaitou-Sideris 2014, p. 2-3)? The collection of chapters focus on the theoretical and applied, and "employ an explicit spatial lens and social justice frame in comprehending and addressing informality" (Mukhija and Loukaitou-Sideris 2014, p. 2-3). This thesis seeks
to apply this framework when understanding the significance of informal transit in New York City's Chinese (im)migrant community.

My examination of this informal system's value for incorporation into New York's urban governance and resilience also seeks to build on a framework of the symbiotic relationship between the state and criminal groups in planning (Roller 2017, p. 24). Roller employs a discussion of several examples of illicit organizations' involvement in urban planning elements of infrastructure investment by criminal organizations to highlight the way in which state failures breeds informality, which in turn stigmatizes its existence, while creating the tension of criminal activity with official state governance. While this study does not incorporate such extreme elements of criminality, the understanding contributed by Roller is a critical space to situate my analysis for incorporating informal community transit into urban solutions. As Roller suggests, "in situations in which the state is absent, failed, or unwilling to provide services, criminal planners fill a desperate need and benefit underserved populations, usually the poor and racial, ethnic, religious, or caste minorities" (Roller, p. 23).

Contributing to the growing field of informality in "developed" cities, this project will also engage the feasibility of informal networks being incorporated into local solutions to climate change and adaptation. While formal systems of support in immigrant communities are helpful metrics of connections throughout an urban neighborhood, informal networks are relied on heavily by the individual yet are often understudied. In Agrawal's "Local Institutions and Adaptation to Climate Change" (2009), local institutions are highlighted as a central piece of the partnerships necessary to local adaptation to climate change. Agrawal primarily focuses on the rural poor, but
still provides a helpful framework and basis for the emphasis on locally-based adaptation to climate change. The gap this project fills is that better understanding informality in the Chinese immigrant community in an urban setting such as New York City has not been adequately addressed.

Not exploring the role of (im)migrant institutions and informal systems in disaster preparedness and climate-change adaptation irresponsibly leaves out those often most harmed by such crisis events. Studying New York's Chinese community challenges the classic framing of migrant communities as a hurdle to local urban resiliency. Migrant communities and the ethnic networks, often hastily employed to counter the gaps in mainstream institutions, should be leveraged into local applications of disaster preparedness. This framing builds on the acknowledgement of the uneven effect of disaster response and relief efforts (Donner and Rodriguez 2008). In their discussion of migration and its impact on communities with limited access to formal systems of support, Donner and Rodriguez describe the acute risk of increased vulnerability of (im)migrant communities in the face of disaster. The article includes a valuable acknowledgement of the reluctance to seek help from government authorities, whether because of immigrant status or mistrust of aid workers and uniformed officers, but mostly focuses on cultural reasons specific to Latinx communities in the US. While these conclusions bring up important inequalities and barriers to access that confront (im)migrant populations, the conversation must continue to how to leverage the networks that support these communities in the absence of large-scale state support. Embedded in their analysis is the assumption that migrants lack social capital (Donner and Rodriguez 2008, p. 1096): while it is true there are linguistic limitations and connections to the
mainstream, this conclusion ignores the potential of community networks and the feasibility of incorporation in urban resiliency. Thus, the authors' call for multi-faceted responses to disasters without discussion of the inherent strengths of (im)migrant communities leaves their suggestion ultimately incomplete (Donner and Rodriguez 2008, p. 1107).

V. Social Capital in Disaster Response

Social capital can be defined as "social networks and the associated networks of reciprocity and trustworthiness" (Price 2011; Putnam 2007, p. 137). These invisible ties that unite neighborhoods play a specific role in community formation in New York City's Chinese immigrant hubs of commercial and residential life. Putnam argues that immigration has a temporary negative effect on social capital: even going so far as to say that "ethnic diversity challenge[s] social solidarity and inhibit[s] social capital" (Putnam 2007, p. 138). He goes on to prove this point by his discussion of the "contact hypothesis," the idea is that social contact with those different from us decreases "initial hesitation and ignorance" and even can build into "trust" (Putnam 2007, p. 141). Taking the idea even further, he suggests that diversity not only limits out-group social ties but also restricts in-group social capital. Putnam's evidence is rooted in the Social Capital Community Benchmark Survey, carried out in 2000 in parallel to the census, across 41 different sample sites across the country. He interprets his findings to include that increasingly diverse census tracts tend to see a decline in overall community engagement (Putnam 2007, p. 150). However, due to the nature of the data he's examining, he does not adequately consider the influence of informality as a form of social capital: indeed, as
he looks to community resources and institutions, he primarily focuses on state-sponsored, formal sites as his target space of "social interaction," including schools, libraries, civic associations, among other small-scale local institutions (Putnam 2007, p. 157). Finally, I would also argue that Putnam completely downplays the social resistance and strength of social ties within migrant communities, instead valuing the connections to the white social majority. This denies social capital its proper place in the process of migration. For example, in Ehrkamp and Nagel (2012), the importance of religious institutional membership and identity increase directly through the process of immigration. While participation in religious institutions is unrelated to trust in informal transit networks, it demonstrates effect of migration on the role of social networks in an individual's experience in diaspora communities.

Charles and Kline (2006) add a layer of complexity to the production and maintenance of social capital on the individual level, rather than at the aggregate state or national level. Moreover, their study isolates carpooling as a better lens through which to understand social capital among people of the same race, versus the use of "trust" and participation in social organizations (Charles and Kline 2006, p. 582).

While incorporating social capital as a strength in resilience solutions, planners must interact with the work of Dr. Eric Klinenberg and his concept of "social infrastructure" (Klinenberg 2018). His research on the social side of disaster and its intersection with networks and systems of support for the elderly comes to the forefront of his book Heat Wave, investigating the social conditions leading to the massive loss of life in the 1995 Chicago Heat Wave. Heat Wave builds on the reality of climate change, extreme events and urban crises, and the tension of balancing community responses to
urban resiliency with governmental responsibility. There must be a balance: delegating services and public health security to local organizations presents risks to city residents if not done properly and in a supported and sustained way (Klinenberg 2015, p. 163). Klinenberg's research introduces the idea of misplaced responsibility and deprioritization of marginalized communities in the wake of disasters in his chapter, "Malign Neglect: The Political Will to Tolerate Deprivation," where crisis scenarios only exacerbate "insufficient service delivery" as not an isolated occurrence, but part of "a longstanding problem" (Klinenberg 2015, p. 154). These themes of the responses of social networks in these situations continue in Klinenberg's recent book, Palaces for the People, digging deeper into the concept of "social infrastructure," as distinct from social capital: "social infrastructure" specifically highlights the spaces and systems that foster "mutual support and collaboration" that are activated in extreme situations (Klinenberg 2018, p. 5). These ideas can be applied to the case study of the Chinatown vans when exploring their potential to support urban resiliency in New York City. As Klinenberg emphasizes, cities cannot defer responsibility to these social safety nets, but must empower and support them to truly be sustainable.

Moreover, In "Lessons from Hurricane Sandy: a Community Response in Brooklyn, New York," established that community involvement is key to bottom-up planning, functioning at and between multiple layers of the city (Schmeltz et al. 2013, p. 800). Using the non-profit Red Hook Initiative (RHI) as a case study, the researchers explore how the community formed its own hub of information and relief coordination in the absence of timely formal outreach. RHI focused through the Red Hook Houses, the second largest public housing complexes in New York State (Schmeltz et al. 2013, p.
Through RHI, community networks created an "opportunity for community stakeholders to establish and maintain strong social networks and have a profound understanding of the inner workings of the community" (Schmeltz et al. 2013, p. 804). This conclusion leads to the team's recommendation that there are clear steps taken to identify vulnerable populations, little has been done to develop plans for adaptation at the city level. The lesson learned from RHI is that, while it is encouraging to see the responses of a community network, it is yet another reminder that more needs to be done to coordinate formal resources with local responses, in a way that empowers local communities rather than ignores them (Schmeltz et al. 2013, p. 805).

Empowering the van drivers and dispatchers to respond in the aftermath of a disaster is not without historical precedent: the dollar vans serving the West Indian American community in Brooklyn, for example, responded to cuts in transit and stranded communities after Hurricane Sandy. In an interview with Aaron Reiss for his article, "New York's Shadow Transit" in The New Yorker, Reiss quotes Anthony Campbell, a driver: “The M.T.A. buses withdrew their service because they said the downed trees weren’t safe for the buses. You know, we were smaller, so we were able to travel to and from” (Reiss and Lavey). Can these ideas be applied to the Chinatown vans and see New York's second largest immigrant population as a source of strength for the city, rather than a blind-spot in mainstream urban resiliency efforts?

The city should reframe informality in (im)migrant communities as a viable solution for resiliency by putting community resources directly into the hands of those directly affected by crisis situations. Whether or not incorporation into state-supported
urban resiliency efforts relies would cause more harm than good, is something to continue to consider and not rest on any assumptions. However, we must first start by recognizing the strength of the relationship between networks of support contested through the experience of migration and introduce their feasibility of expansion in crisis situations. The fact that informal networks, like the vans, have come up in countless conversations I've had with community members about transit responses after Hurricane Sandy in 2012 or 9/11 in 2001: both times, the vans were there responding and reacting to gaps in service, a reaction that was part entrepreneurial, part community service.

This reaction is rarely mentioned in literature on the resiliency of (im)migrant networks on a discussion of social capital in (im)migrant communities, and as a potential resource to reduce barriers of mobility for some of the populations most vulnerable in the wake of a disaster, including, but not limited to low-income families, senior citizens, low-literacy or limited-English-proficient individuals, and individuals with disabilities. Considering how our systems are constructed with these populations as an afterthought (if at all), it is urgent that urban policies respond by acknowledging the weaknesses in the current state of disaster relief, and encouraging the development of the strengths these communities bring to our society. The vans are potentially an example of the creative solutions that involve these characteristics of a community, rather than further marginalize them. This, however, must be done without putting additional burden on the communities who create them through empowerment, not abandonment and a hands-off approach.
CHAPTER III: METHODOLOGY AND ANALYSIS

Using a mix of qualitative and quantitative methods to study the Chinatown vans and their rides, this paper finds that there is not one type of Chinatown van rider. The complexity of uses speaks to the magnitude of social and economic ties between three major hubs of Chinese American life in New York City, a largely ignored and misunderstood asset of transit informality "hiding in plain sight" (Goldwyn 2017). Moreover, these findings underscore the strength of the City's diversity and range of needs within the Chinese American and immigrant community in New York.

As discussed in chapter one of this thesis, the history of Chinese neighborhood formation in New York City cannot be separated from the significant role of social networks and community support, driven by resistance and resilience to racist anti-Chinese immigration policies. As Chinatown has evolved in the 20th and 21st centuries, understanding its current role through the lens of reinvestment and urban renewal in immigrant enclaves, concludes that the "future remains cloudy as intense real estate speculation and gentrification in the Manhattan and Brooklyn Chinatown areas threaten to undermine success of this gateway for the entry and incorporation of new immigrants and their families" (Guest 2011: 25). While Chinatown's changes have driven shifts in Chinese settlement across the city, the data gleaned from my experience riding the Chinatown vans through survey collection demonstrates that the transportation network of Chinatown vans still provide community-specific access to linguistically accessible resources, entertainment, and employment options for Chinese immigrants in New York City.
Neighborhoods in Flushing, Queens, and Sunset Park, Brooklyn, in particular saw significant increases in the Chinese American and immigrant population from the late 1970s to the present. In addition to these established hubs, nearby neighborhoods like Elmhurst in Queens and Bensonhurst and Bay Ridge in Brooklyn, have experienced a steady increase in the Chinese population. Indeed, by 2010, Queens was the borough with the largest Chinese immigrant population with 150,274 Chinese immigrant residents, and Brooklyn was close behind (126,309), with Manhattan, the home to the original Chinatown, with 59,622 (Zhou 2013, p. 127). Neighborhoods like Flushing and Sunset Park, with the influence of shifts in immigration patterns and push factors from the Chinese diaspora around the world, may have started as "satellite Chinatowns initially formed as areas of secondary settlement, [but] they have become gateways for new flows of labor and capital that are leapfrogging the core" (Lin 1998, p. 107). With this dispersion of the Chinese immigrant community, the proportion of the Chinese in New York living in the "Chinatown core" has "dropped from 35.3 percent to 18.1 percent between 1960 and 1990" (Lin 1998, p. 108).

Lin's note of "leapfrogging" and Zhou's use of the term "bypassing" when conceptualizing the evolution of Chinese communities outside of the historic center are examples of the narrative around Chinese immigrant settlement patterns in the city. As resources, such as foreign investment, ethnic banks, and community service organizations expand their service area to support the Chinese population in Sunset Park and Flushing, Manhattan's Chinatown is no longer the only option for a community of support.²

² The Chinese-American Planning Council (CPC) serves as a strong example of a direct service organization that responds directly to needs of the community as they emerge. Founded in 1965, CPC has recently extended its physical presence with service centers in Flushing and Sunset Park offered programs...
Moreover, through gentrification and rising rents in Manhattan has not only displaced housing accessible to recent working-class immigrants, but has gone to such an extreme that even the ethnic economy jobs that once justified living in the aging buildings are no longer able to survive and sustain the community in a way that the Chinatown garment industry once did (Chin 2005). Not only are jobs in the ethnic economy increasingly available closer to new concentrations of Chinese immigrants in Brooklyn or Queens, there is also the demand for labor pulling the immigrant community away from New York City and across the country: this demand is being met, specifically by the networks of interstate bus systems. For example, Chinatown's eastern edge on East Broadway, now home to a population of Fuzhounese immigrants, serves as the home base and "staging platform" for workers and resources to be disseminated across the United States (Guest 2011, p. 34). In this way, Chinatown is transitioning from the source of employment to the seat of a network of labor distribution, from a residential hub to a core of social and cultural life supplemented by active areas of Chinese immigrant and Chinese American life in the outer boroughs.

I. Background of Economic Ties: The Garment Industry

This paper will now turn to a preliminary discussion of spatial relationship between the garment industry, a historic employment source in the Chinese immigrant community, and contemporary sites of Asian immigrant settlement in New York City. My analysis begins by exploring the relationship between statistically significant clusters of limited-English proficient (LEP) households speaking Asian languages and the

declining role the garment industry has played in the commuting flows of Chinese immigrants in New York City. With this foundation in mind, Figure 1.0 below confirms the ideas of the significant role neighborhood residential patterns are playing in Chinese immigrant settlement across the city: there are high clusters of statistically significant spatial clustered of limited English proficient households who speak Asian / Pacific Islander (API) Languages at home in the neighborhoods of Manhattan's Chinatown, the Garment District in Midtown, Sunset Park, Jackson Heights, and Flushing. While unfortunately disaggregated Chinese speakers is not available (nor would an even more granular approach of Fujianese vs. Cantonese or Mandarin, for example), we must recognize this limitation to the information represented below when attempting to interpret the experience of Chinese immigrants across the city. While households speaking API languages cannot necessarily be understood as a proxy for understanding Chinese households, there are a few reasons why this preliminary look at the community can help us understand the spaces discussed in this paper. Chinese immigrants are on track to surpassing Dominicans as the largest immigrant group in New York City: Chinese were 11.4% of the foreign-born population in New York City in 2010 (Yu 2016, p. 13). Chinese has also been the most common language spoken in the population of Asian Pacific Islander English language learners across the country; thus, this project will look at the trends for the API community as a way of understanding how Chinese

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3 Census Tract level data available from the 2016 American Community Survey (ACS) from the U.S. Census Bureau.
4 According to a report by the Census Bureau, API languages include: Chinese; Korean; Japanese; Vietnamese; Hmong; Khmer; Lao; Thai; Tagalog or Pilipino; the Dravidian languages of India, such as Telugu, Tamil, and Malayalam; and other languages of Asian and the Pacific, including Philippine, Polynesian, and Micronesian languages. Source: Ryan, Camille. "Language Use in the United States: 2011. American Community Survey Reports." United States Census Bureau, August 2013. Accessed May 2, 2018. https://www.census.gov/prod/2013pubs/acs-22.pdf
immigrant communities across the city are affected by the presence of the garment industry.⁵

Visually, I have represented an overlay of the garment industry sites for the city as of March 2018. While just a first-order observation, there appears to be a relationship between the presence of garment manufacturers and contractors with high-proportions of LEP-households speaking Asian Pacific Island languages. The question then becomes: does proximity mean access and beneficial employment for this population?

**Figure 1.0**

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When we examine Figure 2.0 below, the question of if Chinese immigrants recorded by the 2016 American Community Survey living close to where they work, we do not see what we might expect for immigrant communities if they were those benefiting from garment industry's presence in Sunset Park. For example, Industry City, the highly redeveloped industrial complex in retrofitted and redesigned waterfront properties in Sunset Park as a self-proclaimed "innovation ecosystem", highlights community leaders like Congresswoman Nydia M. Velázquez dubbing the industrial presence in the neighborhood as something that will benefit local residents and fit in with the neighborhood's "walk-to-work" immigrant community. Figure 2.0 below represents the residents who walk to work (per 100k). Rather than a high cluster around 8th Avenue (the geographic center of Chinese in Sunset Park), the high clusters are present in Midtown's Garment District, Manhattan's Chinatown, and Borough Park, the neighborhood directly east of Sunset Park. Borough Park is home to more than a quarter of a million Jews, one of the largest concentrations of Orthodox Jews in the country, and is actually includes a low cluster of LEP API language-speaking households, as we saw earlier in Figure 1.0 (Barnes). Therefore, the data indicates that the relationship between a presence of the industrial sites does not necessarily reflect the rates of immigrant residents who walk to work as much as the rebranded neighborhood nicknames would suggest. The fact that 10% of Chinese in New York City walk to work underscores the disconnect between the garment industry and the proximity of Chinese laborers to their workplace (Yu 2016, p. 13).

These findings confirm that the garment industry no longer plays the same driving force in the flows of the Chinese immigrant community as it used to (Bao 2002; Chin 2005; Hum 2003). Understanding this once central industry decline complicates the understanding of the Chinatown vans linking Sunset Park, Flushing, and Manhattan's Chinatown. So what else is happening that this initial inquiry is not telling us? People are moving between the boroughs' centers of Chinese immigrant life, not just for work, but socializing and shopping as well.

II. Discussion of Methodology

This project and my primary data collection seek to fill these gaps left by the scholarship on the Chinese community in New York as well as the TLC's oversight of the system by prioritizing the people who ride the vans, the neighborhoods the system
connects, and opportunities for the city to support the system, given the reasons it came to exist in the first place.

This study utilizes primary data through survey collection on rider preferences in the Chinese community, drawing from two contrasting recruitment pools: people riding the vans and through my engagement with the Chinese American Planning Council (CPC), a large social services non-profit. From its inception over 50 years ago in 1965, CPC has worked to respond to the changing needs of an evolving community shaped by the city's demographic shifts and immigration policy's impact on the situation of newly arrived immigrants.\(^7\) CPC has grown from a Chinatown-based direct service organization to the largest Asian Pacific American service organization in the United States, with more than 4,000 employees as part of its network serving more than 60,000 people each year. Through previous partnerships with the Chief Strategy Officer, Simon Chiew, and his colleague Brenda Choy, we had discussed the use of the vans by different members of their staff because of the convenience of transit between Flushing, Chinatown and Sunset Park, particularly given their recent opening of Flushing and Sunset Park service centers. I approached the strategy team with the proposal of collecting survey data from their employees and others I survey while riding the vans in order to gain a more nuanced understanding of who the vans serve and why.\(^8\)

The partnership with CPC staff as a foundation for survey collection is complemented by my experiences riding the vans and interviewing people through

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\(^8\) These conversations and initial ideas for the survey creation and structure took place in person at the CPC headquarters on Elizabeth Street in Chinatown on the following dates: April 24, 2018; September 27, 2018; and October 25, 2018.
interactions in transit. Potential respondents are recruited through informal conversation in both English and Mandarin, after introducing myself and describing my project. The survey is available on my laptop and on paper, written in both simplified Chinese characters and English (see Appendix A). It is in the initial conversation with my fellow passengers that I gauge his or her comfort with Mandarin and/or English, before asking their willingness to participate in the voluntary survey and describing the oral consent information and the data's anonymity (see Appendix B). Once the participant has agreed, I then ask the individual if they would prefer to fill in the survey themselves or have me ask the questions.

Survey collection with CPC took place at the CPC All-Staff meeting, which took place on Monday, November 12, at an auditorium and cafeteria at St. John's University in Queens. The gathering of staff included CPC members from the three core service locations gathering together for training on adjustments to the mission statement and other key initiatives. With Simon and Brenda's help, I set up a table with other staff resources and introduced myself to the staff community during their lunch break. This session generated 26 responses and several informal discussions for qualitative analysis later in this thesis.

In this first wave of data collection riding the vans and partnering, I gathered 11 complete surveys, and three partial surveys. After given the option to verbally complete the survey, only one person opted to fill it out herself, and even she asked me to switch to asking her verbally
Perhaps this has something to do with being on a moving vehicle, and even with the clipboard some found it perhaps motion-sickness-inducing or uncomfortable to read and write. Of those who opted for the verbal survey, two out of 11 were illiterate. One older woman also described how the text of the survey was too small and difficult for her to read and opted for verbal participation (size 11 font in order to fit on one double-sided page).

**IV. Selection Bias**

Going forward, I will be sure to collect how many times survey participation was declined: thus far, I secured no more than three responses per ride, and usually ask only the few other passengers seated around me. I have taken eight trips on the vans over the last month, and recruited respondents in five of those rides. Other rides, the passengers would be completely silent and deep in their phones, and I spoke to no one. Of those who did not want to respond, it was often the oldest of riders who I asked who simply waved their hand "no." All but two of the interviews collected on the vans were conducted in Mandarin. In contrast to the elderly riders who declined my survey, one demographic that consistently declined my survey were those riders who appeared to be young women in their 20's. Most were smartly dressed, and traveling to and from Flushing from either Chinatown or Sunset Park. Visually, there was a different class presentation: designer

<table>
<thead>
<tr>
<th>Literacy Categories (# of respondents)</th>
<th>Low Literacy</th>
<th>English Only</th>
<th>Chinese Only</th>
<th>Literate in 2 or more Languages (including English)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>2</td>
<td>12</td>
<td>4</td>
<td>19</td>
</tr>
</tbody>
</table>

Smith 35
handbags, smartphones out, and playing voice-text messages most of the ride. My results are still showing the majority of those surveyed as women, but only at about 52.6%. In my observations, female riders were consistently the overwhelming majority of riders (one van ride from Sunset Park to Flushing, during which no one agreed to speak to me), 13 riders were women and only seven were men. Yet my results do not indicate such a stark majority. This disparity reveals something I need to think about more as I continue this project: my positionality as a young white woman. The combination of how I am perceived (as an outsider) together with my "erotic capital" raises the question of gender and racial dynamics at play in the vans: young-adult and middle-aged Chinese men are curious enough to engage in conversation with me comfortably, some even asking me if I'm married or have ever dated a Chinese man (Hakim 2010). Senior citizens of both genders are both by and large more interested in that I speak Mandarin and there is a degree of novelty to that, though I have noticed that while there is interest and a conversation started once I begin to speak Mandarin, usually responding to or asking a question of the van driver. However, the interaction may stop there: the hesitancy in completing the survey has been a barrier in speaking with more reserved or shy older riders. Future strategies to test and employ in the coming months as I continue this research includes; bringing in a Chinese American partner to bridge the cultural gap and provide a degree of comfort; and recruiting participants as individuals board and exit the vans vs. while in transit.
V. Response Analysis

This project allows me to take preliminary steps to analyze the data and build out the code to explore future relationships of rider characteristics. This section will describe the initial findings that help construct initial hypotheses and plans for future inquiry.

My data analysis in this early stage has focused on the question: what subset of the Chinese community in New York do the vans serve? My results have been mixed. Thinking about the use of informal systems as a trait of (im)migrant networks, I first sought out the relationship between time living in New York City and usage of the vans (Blumenburg and Smart 2014). For these tests, I sorted qualitative responses to the question on frequency of van use into a rider vs. non-rider binary. If the respondent selected "never" or "rarely" to the question, they are non-riders (N=20), and if they used the vans a few times a month or more, they were coded as "riders" (N=17). My T-Test results, however, returned that there was no statistically significant relationship in my data between the years in New York and ridership frequency (p=0.53). The individual factor that most contributes to the likelihood of riding the vans frequently was age: the p-value was 0.035 with a 95% confidence interval, demonstrating that the relationship is statistically significant. The average age of non-riders from my sample was 33.15, and the riders averaged 42.44 years old. To further emphasize this pattern in my data, the chi-squared test supported this relationship: comparing frequency of rides and age categories (Under 30, 30-50, and over 50), the p-value is 0.007, which allows us to conclude that the distribution of ridership across age categories is statistically significant.

I also explored the age categories in a frequency table. Even though this is a small sample size, the trend in older residents, regardless of nativity (which was found to be not
significant), is important to note and keep in mind as I leverage this research in my discussion of this systems importance in urban resiliency. This preliminary finding will inform my on-going inquiry if informal transit systems, like the Chinatown commuter vans, can feasibly be incorporated into urban resiliency efforts, which will be another section of this broader research going forward. Indeed, even one of the CPC respondents filled in "emergency situation" as the primary situation in which they would ride the vans (this individual had access to a car and indicated they "rarely" take the vans). Based on qualitative observations and these initial exploratory results, this complicates the city-sponsored names of "NYC Commuter Vans" in the case of the Chinatown vans. Even with the weighting of my results with the usage patterns of the CPC employees (who presumably would have used the vans to travel between their community centers across the neighborhoods the vans serve), the role the vans play reaches well beyond economic purposes. Indeed, neither employment nor working in Manhattan’s Chinatown was statistically significant in ridership frequency using an OLS regression (though which such a small sample size, the model fit was understandably poor). Of the 11 riders interviewed, four of them were unemployed or retired. While this is too small a sample to generalize, I am interested in exploring the role the vans play outside of simply economic

| TABLE II  |
| Age Categories |
| Under 30 Years Old | 30-50 Years Old | Over 50 Years Old |
| 12 | 4 | 20 |

| TABLE III  |
| Ridership Categories |
| Ridership Binary | Age Category | Frequency |
| Non-Rider | Under 30 | 0.9167 |
| Rider | Under 30 | 0.0833 |
| Non-Rider | 30-50 | 0.4000 |
| Rider | 30-50 | 0.6000 |
| Non-Rider | Over 50 | 0.2500 |
| Rider | Over 50 | 0.7500 |
ties across the neighborhoods. For the full R code that I have used for this project, please see Appendix C: this will serve as a foundation for me to explore the relationship between the neighborhoods through the vans as I collect more responses going forward.

The primary reasons for riding the vans, across both pools of respondents, were convenience and dislike for the subway. This was also frequently complemented by a preference for Chinese language accessibility and comfort of the vans. With my small sample, however, there was no relationship between literacy and linguistic comfort and van ridership: this is something I hope to explore more through future survey collection and qualitative interviews to improve the results of my study. It is important to note that in several conversations and responses, the disparity of the vans' cleanliness and safety was seen as a drawback. I experienced these inconsistencies myself: on three of the eight rides, two or more passengers were seated on small plastic stools in the middle of the aisle, often with quite outspoken displeasure. Shouts of protest also erupted after one passenger, en route from Chinatown to Flushing, paid for two seats ($6 total) to have the row to herself. This meant that some of the last passengers to board were in the aisle while the other rider reclined in comfort. The unpredictable city traffic also led to one of the women sitting behind me to discretely vomit into a plastic bag shortly before arriving in Sunset Park. These moments of discomfort and frustration illustrate the tension many riders face with choosing to ride the vans instead of using transit.

VI. Conclusion

This thesis situates these initial findings in the broader discourse of mobility, transit access, and the contemporary relationship of Chinese hubs of life across New York City. While the vans are not a priority of the city or of the community itself, their
persistence all of these years demonstrate the essential benefit these semiformal services provide to those inadequately served by mainstream transit. As one rider commented to me, as he shared he was only visiting from Philadelphia and did not have much experience riding the vans: "all Chinese people know about the Chinatown vans." The familiarity, even without much exposure necessarily, underscores the potential of the system, if properly supported and incorporated into New York's transit priorities. This study supports the next chapter's discussion of how to incorporate informal transit into mainstream services in a more sustainable and supported way. By better understanding the community the vans serve and situating the Chinese immigrant neighborhoods across the city, this thesis will position policy makers to understand the opportunities of supporting the "social infrastructure" of informal transit, and the social capital central to networks of support in (im)migrant communities (Klinenberg 2018).
Building on the findings of my survey of van riders in the last chapter, the informal, community-based system of the Chinatown vans serves a specific purpose, connecting the Chinese community across three boroughs, and addresses the needs of seniors in the community most directly. This chapter will discuss how as New York is prioritizing greater urban sustainability, systems of urban informality should be included and supported, building off of lessons from several case studies that demonstrate how informality functions in extreme scenarios.

For a more qualitative discussion of the Chinatown vans and the flexibility and comfort the community demonstrates in their engagement with the system, I turn to my field notes. Social capital plays out in a direct and functional way in my observational experiences. On a brisk fall afternoon, I specifically noticed the speed with which individual connections and shared destinations come up within the ridership. For example, I saw the rapid problem-solving and no-nonsense approach to transit and a casual social cohesion exhibited by a group of Chinese women as we waited for the Sunset Park-bound bus in Flushing.9 In this case, a group of four women (five, including me), who appeared to be strangers, simply sharing space as we all stood there waiting together, two with suitcases, one on her phone, and another smoking off to the side. I asked how long they had been waiting (in Mandarin), and they said ten minutes with a frustrated tone, particularly given the wind and cool temperatures as the daylight was fading (it was getting close to 4pm on a November afternoon). One of the women

9 Waiting for the van to arrive and collect passengers was quite uncommon in my observations that day: usually, a van is there waiting, and simply stays parked until it's full and departs, about 10 minutes or so from start to finish, depending on time of day and demand.
reaching into her bag, scrolled on her phone, and found a number of a driver - she looked to the other women, including me, and asked the intersections we were going to: all were within a few blocks of each other off of 8th Avenue in Sunset Park. Just like that, a match had occurred. She estimated that if we were to all share a car, it would only be a few dollars more than the vans ($4 per ride, with the private car at about $10 each, split amongst us). She called her contact and asked his rate to 8th Avenue: $40. While we waited, an young man in his early 30's walks over to the bus stop with his elderly father, and the women ask him the same questions. He immediately agrees to join, if there's room in the car.

Fortunately, the car arrived a few minutes later, actually just as the van arrived. The driver only had four seats: the person who called the driver looks to me, and I defer and say that I'd like to take the van. With that, the original four women made a quick decision to all take the car and hopped in (I got in the van with the man and his father). When I asked the man if that was common, he half-heartedly shrugged: he said, "It's a good fit if we're all headed to the same place." He went on to tell me that he takes the vans daily, usually to get to work from Sunset Park to Manhattan's Chinatown for his restaurant job.

This example of social capital engaging with informal solutions to transit then leads to a question central to this thesis: how generalizable and reproducible is the role of social networks in disaster relief? And how can the city government not simply hand off responsibility to local institutions, but rather provide support and resources in an efficient and culturally sensitive way to improve urban resiliency?
Building on a past example of the shortcomings of formal responses to crisis scenarios, this paper will now turn to Yuen Liu's discussion of community organizations' response to assistance after 9/11. The organization (that Yuen Liu intentionally keeps anonymous) responded "to Chinatown workers' and residents' immediate needs" in the aftermath of the destruction and chaos after September 11, 2001's terrorist attacks (Yuen Liu 2003, p. 157). The organization stepped up after inaction and disorganization by official relief organizations, which after a week were still unclear on processes for assistance, particularly for the economic impact of the disaster in the community (Yuen Liu 2003, p. 157)

The Chinatown community specifically needed access to the Robert T. Stafford Disaster Relief and Emergency Relief Act (the Stafford Act), a policy intended for workers who become unemployed due to a declared disaster but are ineligible for unemployment insurance (yuen Liu 2003, p. 157). With a lack of support for translation and assistance for the Chinese immigrant community directly affected after September 11th, the community organization preemptively assisted their constituents to ensure that they had access to a system that was clearly not made with them in mind. Eventually mainstream aid organizations like FEMA "were telling Chinese speaking callers to call [the organization] directly, in a clear example of the organizations instant and unwilling incorporation into the shadow state" (Wolch 1990; Yuen Liu 2003, p.158) -- with organizers responding with "no way. [the government is] deflecting responsibility." (Yuen Liu 2003, p. 158). This example demonstrates the current state of how informality has been incorporated in disaster relief: haphazardly and without the support necessary to ensure communities traditionally left out of formal planning procedures are supported.
Yuen Liu's work demonstrates the need for disaster relief to include the Chinese American community in the work of resilience and relief: this ensures that the community is not only identified as a "location of need," but framing the community as "organizing centers" that can be self-sustaining through local solutions (Yuen Liu 2003, p. 158).

Understanding these calls for informality's incorporation into resilience efforts is critical, at a time when the most vulnerable communities are left behind by formal planning efforts.

1. **The city does not know much about the vans and does not intend to learn more about why these systems exist and the shortcomings they identify**

The City's annual reports by the TLC specifically call out that they do not collect ridership data or other metrics about the vans (NYC TLC 2018, 2017). Building on the work of Eric Goldwyn, who studies the commuter vans used along Flatbush Avenue in Brooklyn by the Caribbean community to access subway lines, argues that the City should incorporate a style of planning known as "generative" planning that operationalizes local knowledge rather than the quantitative datasets and methods of analysis typified by "high modernist" planning (Goldwyn 2018, p. 1). He goes on to argue that the distinction between formal and informal is largely "legal rather than practical": "the MTA would benefit from creating new practices to understand changes in ridership across the city" (Goldwyn 2018, p. 3). A review of one of the earliest reports on the vans, dating back to the 1982, includes only passing reference to the Chinatown lines of the vans and acknowledges all of the gaps in their methodology of understanding the system and the community it serves (NYC Taxi and Limousine Commission 1982).
Informality has a long record of filling the gaps left out by mainstream service. These selected lessons from case studies demonstrate how and why New York should turn to its diverse communities for solutions, while being careful not to inadequately bring them into the conversations around planning, just to have the burden of supporting their communities without placing all of the cost of the system back on those left out in the first place.

This pattern of disregard for informal systems continues in the absence of community-based solutions as input in broader resiliency plans across the city. A critique of the initiatives around OneNYC (and its previous iteration PlaNYC) leave out the communities who are most impacted and vulnerable in crisis scenarios: senior citizens and migration populations (Jabareen 2014).

In an evaluation of the current plan for New York City's sustainable plan and response to climate change mitigation, Jabareen (2014) emphasizes "equity" as a critical piece to evaluating the city's plan, including community specific conditions and vulnerability (Jabareen 2014, p. 5901). Notably, Jabareen also includes "social networks" as a component of the factors that go into a community's response to climate change at the local level, and even specifically points to transit creativity and diversity of the community as a signal of urban resilience (Jabareen 2014, p. 5901-2).

PlaNYC, the comprehensive evaluation of New York City's responses to climate change, was launched in 2007 and updated in 2011. The Plan seeks to prepare the city for a rise in population to over one million by 2030 with an aggressive stance on resiliency, climate-related disaster risk mitigation, and sustainability (The City Of New York, 2011).
disruptions and the city's infrastructure as a whole are directly subject to risk by increased chances of frequent flooding (Jabareen 2014). However, despite the emphasis on community engagement, this is yet another example of top-down planning that does little to incorporate the perspectives of organizations that have stepped up in the past to respond to crisis scenarios.

2. **Planning scholars are calling for the incorporation of informality into the way that cities think about the future of planning (Mukhija and Loukaitou-Sideris 2015)**

While informality is often delegated to studies of "developing countries," it is misguided to think that informality does not play a critical role in communities across the U.S. (Mukhija and Loukaitou-Sideris 2014, 2015; Douglas 2018). Planners are calling for the incorporation of informality in planning curriculums in the United States; the intention is that city planners will be able to adapt and incorporate more nuanced approaches to solving urban problems. Building on the framework of approaches put forward by Mukhija and Loukaitou-Sideris, my recommendation is that there by "a reformist approach" taken in New York City's planning to incorporate informal transit: this approach encourages cities to respond to informality, understanding it has emerged for a reason, and demands that governments play an "active" role "supporting and upgrading informal activities" (Mukhija and Loukaitou-Sideris 2014, p. 447).

The reformist approach to supporting the vans can benefit the city in its goal of OneNYC to better serve all New Yorkers in everyday uses and also lead to more trust, engagement, and awareness of the Chinese immigrant context-- particularly as the community grows -- to create more successful models of disaster preparedness and resilience. Given my findings about the vans' ridership and the gaps it reveals in
mainstream service, the City's plans for resiliency would benefit from engaging with the system of informal transit to achieve the goals of accessibility and environmental justice for the city's most vulnerable communities.

Future research to expand on this idea should test and plan engagement with the van riders and drivers and incorporation in OneNYC's next progress report, as well as examine other expressions of informality in the Chinese American community in New York City, specifically as it pertains to the senior citizens. For example, how do the active settlement houses and community centers geographically linked with centers of Chinese American life create hubs of support and resources to ensure the physical, cultural, and emotional wellbeing of Chinese immigrant seniors? Yet how do the persistent presence of canners, many of whom are over 80 years old, collecting and redeeming cans to supplement their income, complicate these narratives of social capital, resilience, and informality?

The vans, and urban informality in general, can also be an opportunity to better engage with the dispersion of the Chinese American population across the city: as a supplement to spatial methods and census data, understanding a system that connects spatially disparate communities together can help social scientists understand the complexities of changing cities breaking out beyond the classic enclave model.
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definition of the word informal -- helpful framework: "describe both the relationship between dollar vans in New York Ci. (n.d.)."


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Sources to look up. (n.d.).


Appendix A: Survey

Commuter Van Survey 华人小巴调查
Write in responses on spaces provided, or select all that apply.
请在横线上写出答案，或者选择与您情况相符的所有选项。

1. Gender 性别
   a. Male 男性
   b. Female 女性
   c. Other 其他: __________

2. Age 年龄________

3. City and Country of Birth 出生地点(城市，国家) __________

4. Ethnicity 种族
   a. Chinese (Han) 中国人 (汉族)
   b. Burmese 缅甸人
   c. Korean 韩国人
   d. Vietnamese 越南人
   e. Asian-American 亚裔美国人
   f. African-American 非裔
   g. Latin-American 西裔
   h. European-American 白人
   i. Other 其他: __________________

5. Length of time lived in New York City (years) 在纽约的居住时间 (几年)
   ______

6. What language(s) can you read / write (list primary language first)? 你能读/写
   什么语言 (先写主要语言):
   ____________________________________________________________

7. Are you currently employed? 你是否有工作?
   a. Yes 有
   b. No 没有

8. What is your current job industry? 你在什么行业工作？
   a. Food services and Hospitality 食品服务与酒店业
   b. Healthcare 保健服务
   c. Manufacturing 制造业
   d. Administrative 管理
   e. Student 学校注册就读
   f. Retired 退休
   g. Unemployed 无业的
   h. Other 其他: __________

9. Work Neighborhood 工作地区
10. Residential Neighborhood 居住地区
   a. Flushing, Queens 法拉盛, 皇后区
   b. Jackson Heights, Queens 杰克逊高, 皇后区
   c. Sunset Park, Brooklyn 八大道, 布鲁克林区
   d. Bensonhurst, Brooklyn 本森赫斯特地区，布鲁克林区
   e. Chinatown, Manhattan 唐人街，曼哈顿
   f. Unemployed 无业的
   g. Other 其他：__________

11. What are your most frequently visited neighborhoods? 你最常去的地区是什么？
   a. Flushing, Queens 法拉盛, 皇后区
   b. Jackson Heights, Queens 杰克逊高, 皇后区
   c. Sunset Park, Brooklyn 八大道, 布鲁克林区
   d. Bensonhurst, Brooklyn 本森赫斯特地区, 布鲁克林区
   e. Chinatown, Manhattan 唐人街, 曼哈顿
   f. Other 其他：__________

12. Have you ever taken the commuter vans? 你有没有坐过小巴？
   a. Yes 坐过
   b. No 没坐过

13. Reasoning and use
   a. If/When you do ride the vans, reasoning 如果选择坐小，原因是什么
      i. The vans are convenient 小巴很方便
      ii. Cost effective 合理的价格
      iii. Preferred drop off/pick up location 比较喜欢上车／下车的地点
      iv. Driver speaks my language 司机说我的语言
      v. Van logo names written in Chinese 小巴标志刻字用汉字
      vi. Safety 安全
      vii. Comfort 舒服
      viii. I ride the vans when visiting family and friends 我坐小巴去访问家人
            和朋友
      ix. I ride the vans to commute to work 我坐小巴去工作
      x. I take the vans to access community services 我坐小巴去接受社区服
            务

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xi. Other 其他：__________
b. If/when you don't ride the vans, reasoning and preferred transit 如果没有,原因与比较喜欢的旅游方法
   i. The vans don't go to the neighborhoods I want 小巴没有抵达我想去的地方
   ii. Too much traffic 堵车太多了
   iii. I prefer the subway 比较喜欢地铁
   iv. I prefer the bus 比较喜欢巴士
   v. I prefer to walk 比较喜欢走路
   vi. I prefer to ride a bike 比较喜欢骑自行车
   vii. I have a car 我有自己的车
   viii. I prefer to take a taxi 比较喜欢出租车
   ix. Other 其他：__________

14. Frequency of Van Use 坐小巴频率
c. Daily 每天
d. 2-3 times per week 每个星期 2-3 次
e. A few times a month 每个月几次
f. Rarely 很少
g. Never 我没有坐过小巴

15. Most frequently used van trip lines 最常用的小巴旅行线路
   h. Chinatown 唐人街——Sunset Park 八大道
   i. Sunset Park 八大道——Flushing 法拉盛
   j. Flushing 法拉盛——Chinatown 唐人街
   k. Other 其他：__________

16. Van Use Time of Day 坐小巴的时间
   l. Early morning 清晨
   m. Morning rush hour 早上高峰时间
   n. Midday 正午
   o. Evening rush hour 下午高峰时间
   p. Late night 深夜
   q. Weekdays 工作日
   r. Weekends 周末

17. With whom do you ride the vans? 和谁坐巴出行
   s. I travel alone 自己
   t. With my children 和孩子
   u. With my parents 和父母
   v. With my friends 和朋友
   w. Other 其他：__________

18. Annual income over the last year 你过去 12 个月的收入是多少钱
x. <$31k
y. $32k-$50k
z. $50k-$75k
aa. $75k-$100k
bb. $100k+
Appendix B: Oral Consent

THE CITY UNIVERSITY OF NEW YORK
The Graduate Center
International Migration Studies

ORAL OR INTERNET BASED INFORMED CONSENT

Title of Research Study: New York City's Chinese Commuter Van System

Principal Investigator: Alexandra Smith
International Migration Studies, Graduate Student

You are being asked to participate in this research study because you may travel between Flushing (Queens), Sunset Park (Brooklyn) and Chinatown (Manhattan). The purpose of this research study is to understand New York City's Chinese community's travel preferences and use of the commuter van system. If you agree to participate, we will ask you to respond to an anonymous survey of multiple-choice questions, which should not take more than five minutes. There are no known risks of participating in the survey, and no personal identifying information will be recorded.

Your participation in this research is completely voluntary. If you have any questions, you can contact Alexandra Smith at asmith@gc.cuny.edu or 860-919-3418. If you have any questions about your rights as a research participant or if you would like to talk to someone other than the researcher, you can contact the CUNY Research Compliance Administrator at 646-664-8918 or HRPP@cuny.edu.
研究标题：纽约华人小巴系统

主要研究者：Alexandra Smith (李芸)
国际移民研究学生

您被邀请参与此研究的原因是您可能乘坐纽约华人小巴在唐人街、法拉盛、八大道
布鲁克林地区之间往返。此调查的目的是了解纽约华人社区的出行偏好与小巴使用
情况。

如果您同意参加，我将邀请您填写一份匿名调查。调查包括多项选择题和填空题，
全过程不超过五分钟。参与此调查没有风险，也不会记录个人信息。

参加这个调查是完全自愿。如果您有问题，您可以联系李芸：通过电子邮件
asmith@gc.cuny.edu，或者打电话 860-919-3418。如果您对作为调查参与者的权利
有疑问或想和联系除了调查研究者外的其他人，请您给 CUNY 研究合规管理部打
电话 646-664-8918 或发送电子邮件 HRPP@cuny.edu。
Appendix C: R Code

setwd()
require(data.table)
travel<-fread("vansurvey.csv", stringsAsFactors = F, data.table = T)

names(travel)
head(travel)
summary(travel)

###median age: 33.50

table(travel$"Frequency")
table(travel$"Age")
table(travel$"Birthplace")
table(travel$"Time")
table(travel$"Employed")
table(travel$"Residential")
table(travel$"Work")

travel$freq <- ifelse(travel$`Frequency`=="Never",0,1)
travel$freq <- ifelse(travel$`Frequency`=="Rarely",0,1)
travel$age_cat <- ifelse(travel$`Age`<30, "Under 30", travel$Age)
travel$age_cat <- ifelse(travel$`Age`>=30, "30-50", travel$age_cat)
travel$age_cat <- ifelse(travel$`Age`>50, "Over 50", travel$age_cat)
table(travel$age_cat)
table(travel$freq)

travel$lang_cat <- ifelse(travel$`Language`=="English only","English",travel$Language)
travel$lang_cat <- ifelse(travel$`Language`=="English","Bilingual",travel$lang_cat)
travel$lang_cat <- ifelse(travel$`Language`=="Chinese","Bilingual",travel$lang_cat)
travel$lang_cat <- ifelse(travel$`Language`=="Chinese only","Chinese",travel$lang_cat)
travel$lang_cat <- ifelse(travel$`Language`=="some Chinese","Low Literacy",travel$lang_cat)
travel$lang_cat <- ifelse(travel$`Language`=="none","Low Literacy",travel$lang_cat)

travel$lang_bin <- ifelse(travel$lang_cat=="Bilingual",1,0)
travel$lang_bin <- ifelse(travel$`Language`=="English",1,travel$lang_bin)

table(travel$lang_cat)
table(travel$lang_bin)

travel$years <- ifelse(travel$`Time`<5,"Under 5",travel$Time)
travel$years <- ifelse(travel$`Time`>=5,"5-20",travel$years)
travel$years <- ifelse(travel$`Time`>20,"Over 20",travel$years)
table(travel$years)
View(travel)

###### Question 1: Is there a relationship between ridership and language access?
chisq_rent_lang <- chisq.test(travel$freq, travel$lang_bin)
chisq_rent_lang

### Comment 1: No. The relationship between ridership and language-literacy is not statistically significant with this sample.

###### Question 2: Is there a relationship between length of time living in NYC, age, and ridership?

travel$Time<- as.numeric(travel$Time)
Ttest_age <- t.test(travel$Age ~ travel$freq)
Ttest_timeNYC <- t.test(travel$Time ~ travel$freq)
Ttest_age
Ttest_timeNYC

#### Comment 2: Age is statistically significant in its relationship to ridership (p=0.034), but length of time in NYC is not (p=0.5267).

###### Question 3: Is there a relationship between place of birth and ridership?

install.packages("splitstackshape")
require(splitstackshape)
split<-cSplit(travel,"Birthplace",sep=",")
View(split)
travel$nativebornUSC<- ifelse(split$Birthplace_3=="USA","native","immigrant")
travel$nativebornUSC<- ifelse(split$Birthplace_3=="NA","immigrant",travel$nativebornUSC)

chisq_rent_native <- chisq.test(travel$freq, travel$nativebornUSC)
chisq_rent_native

#### Comment 3: While I did receive an error message due to the small sample size, at this stage, being native born does not impact ridership in a statistically significant way.

###### Question 4: Let's look deeper at age's relationship with ridership:
chisq_rider_ages <- chisq.test(travel$freq, travel$age_cat)
chisq_rider_ages

age_rider <- with(travel, table(freq, age_cat))
table_cols_age <- prop.table(age_rider, margin = 2)
View(table_cols_age)

#### Comment 4: Using the chi-squared test, age is statistically significant to ridership, though must note it is a small sample size.

###### Question 5: What would the code be to run a full regression on this data?

travel$female <- ifelse(travel$Gender=="Female",1,0)
travel$female <- ifelse(travel$Gender=="Female / <eb><c7><97>_",1,0)
travel$employ <- ifelse(travel$Employed=="Yes",1,0)
travel$workplace <- ifelse(travel$Work=="Chinatown, Manhattan",1,0)

OLSreg <- lm(formula = freq ~ female + employ + workplace, data = travel)
summary(OLSreg)

###### Further exploration of variables:

table_years <- table(travel$years)
table_language <- table(travel$lang)
table_ages <- table(travel$age_cat)
table_freq <- table(travel$freq)

prop.table(table_years)
prop.table(table_language)
prop.table(table_ages)
prop.table(table_freq)
Approval Notice
Initial Application

03/29/2019

Alexandra Smith,
The Graduate School & University Center

RE: IRB File #2018-1500
Chinese Commuter Van Application

Dear Alexandra Smith,

Your Initial Application was reviewed and approved on 03/29/2019. You may begin this research.

Please note the following information about your approved research protocol:

Protocol Approval: 03/29/2019
Protocol Risk Determination: Minimal
Expedited Categor(ies): (7) Research on individual or group characteristics or behavior (including, but not limited to, research on perception, cognition, motivation, identity, language, communication, cultural beliefs or practices, and social behavior) or research employing survey, interview, oral history, focus group, program evaluation, human factors evaluation, or quality assurance methodologies. (NOTE: Some research in this category may be exempt from the HHS regulations for the protection of human subjects. 45 CFR 46.101(b)(2) and (b)(3). This listing refers only to research that is not exempt.)

Documents / Materials:

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Please remember to:

- Use **the IRB file number** 2018-1500 on all documents or correspondence with the IRB concerning your research protocol.

- Review and comply with CUNY Human Research Protection Program [policies and procedures](http://www.cuny.edu/research/compliance.html).

The IRB has the authority to ask additional questions, request further information, require additional revisions, and monitor the conduct of your research and the consent process.

If you have any questions, please contact:
Valerie Shafer
000/000-0000
vshafer@gc.cuny.edu