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CLASPO Summer Funds Report

“The Transportation Experiences of the Women of Pudahuel, Santiago”

## **Outline**

- I. Objectives of research**
- II. Description of research methodology (including possible obstacles to the process of data collection)**
- III. A brief description of the national context (political, economic, social, and ethnic issues)**
- VI. A description of the communities visited**
- V. Policy implications (based on your findings, assessment of the national context social policy in the topic)**
- VI. Possible areas in which the research could be developed further**
- VII. A list of people interviewed and their contact information**
- VIII. The needs of the communities in terms of research (what do they perceive as a priority to be researched).**

## **I. Objectives for Research**

Initially, I wanted to focus on women of female-headed households in Pudahuel, Santiago de Chile and their transportation barriers. This was an ideal target population due to the increasing number of female-headed households throughout Latin America, and specifically in Santiago comunas that contain social housing projects. Yet when I arrived in Santiago and began my initial research, I found that the majority of Chilean women who live in the urban periphery experience a complex array of transportation barriers. Whether they were single mothers, living with their families, or married with children, they all expressed the need for reliable, safe, inexpensive, efficient, and accessible forms of public transportation.

As a result of these experiences and with time and resource constraints, I decided to broaden my target population to include all women who live in Pudahuel, Santiago de Chile. My objective incorporated the understanding of transportation barriers that these women experienced and what suggestions they had to improve both the public/private transportation systems throughout the greater metropolitan area of Santiago. Specifically, I wanted to focus on three factors that play a role in the selection of transportation method(s) and accessibility. These include duration of method of transportation, travel time, and perceived level of safety of travel. These three factors were chosen as a result of initial discussions with Santiago urban planners and academics when I first arrived in Chile. I was told that the lack of existing research on women's transportation experiences in the urban periphery areas would make my research more difficult, but there was a desperate need for it. Municipality officials, academics, and social organizations in Pudahuel expressed a deep interest in my work and requested the results to be used in further research and to be sent back to the comunna.

## **II. Description of Methodology**

As described above, my target population was broadened to incorporate all women who live in Pudahuel. This occurred due to a more in-depth understanding of the socio-economic context in Santiago. Yet time and research constraints also played a role in this shift in research. While I was able to make a number of important and useful contacts through La Universidad de Pontificia, specifically their Urban Studies Institute, access to data was limited. Data on the household level in Santiago is not accessible. Therefore, I could not determine which houses in Pudahuel were occupied by single women. Targeting only women of female-headed households would take a much longer and drawn-out process, and due to my time constraints and factors described above, I opted to expand the target population to all women who live in Pudahuel.

Initially, I had also planned to acquire a data set of all of the households in Pudahuel and to perform a randomized sampling process with this data. I would then visit the randomly selected households and solicit a female resident between the ages of 18 and 60 to complete a survey. Yet, as mentioned above, the data on this level is not available in Santiago. As a result, many researchers randomize data on the block level and then choose a percentage of houses on each block to visit. But after discussing my methodology with numerous academics that have had a lot of experience working in areas such as Pudahuel, I opted to survey women in medical centers, bus stops, and municipality centers due to obvious time constraints. The randomization process at the block level would take a lot of time and manpower. Also, in order for this process to be reliable and to yield credible research, I would have to perform a multitude of random samples and house visits. Therefore, I contacted a person in the Pudahuel Municipality, who was

very interested in my research and who agreed to assist me in the recruitment of centers that would allow me to survey women visitors.

The surveys distributed to women included questions regarding: age, number of children (if any) and their ages, familial monthly income salary level (and number of people who live in the household under this income), job status, work shift, methods of transportation to work and health care, and perceptions of safety regarding delinquency and accidents while accessing work and health care. The Flujo Vehicular Studies of Pudahuel depicted that the peak times for vehicular traffic, including buses, occurred between 7:30 am to 8:30 am and between 6:45 pm to 8:00 pm (*Flujo Vehicular, la Municipalidad de Pudahuel, 2001*). Therefore, I chose to survey women at bus stops in Pudahuel between these times and survey women at the medical centers and municipality centers during the day.

While analysis of the survey results assisted me in understanding the transportation barriers of these women, I felt from the beginning of my research process that an extra component would be necessary in understanding the entire context of these women's experiences with the various methods of transportation. A more in-depth method of acquiring this data was necessary, and I therefore chose to hold a focus group and an in-depth interview. The focus group would allow a facilitated discussion with group dialogue. The women would be able to express their experiences and concerns in regards to transportation with each other, while I gained a more in-depth understanding of the survey results.

The focus group was held on June 17<sup>th</sup>, from 1 pm to 2 pm Central Time Zone. It consisted of my research assistant, three women, and myself who worked in the service sector of la Universidad Católica. The discussion was very helpful, because the women spoke of personal experiences and issues with the transportation systems, in terms of safety, cost, and time. The

dialogue was centered around the survey questions, but in a more in-depth manner. As a result, the focus groups gave a more substantive core of the underlying transportation issues that affected these women that would assist me in writing my thesis.

Like the focus group, the interview would allow me to speak with someone one-on-one in order to understand their personal experiences and concerns. It was held on July 18, 2006 from 1 pm to 2 pm.

### **III. A Brief Description of the National Context: Political, Economic, Social, and Ethnic Issues)**

#### *Current Economic Conditions in Santiago de Chile*

Santiago continues to dominate most of the country's activities. Santiago's Metropolitan Region controls over 39% of Chile's GDP. Approximately 35.6% of the population in the country lives in Greater Santiago, at a density of 7683.1 persons per km<sup>2</sup> (*Schiappacasse, 1998*). Chile's economic restructuring, and its incorporation into the global economy have linked Santiago to the world economy in terms of its new economic sectors. For example, Santiago has become a headquarters for the main service activities of the finance sector and global innovations and products (*de Mattos, 1996*). People from all over the world prefer to live in Santiago on an international level as a result of its modernity, convenient transportation system, and stable, ever-strengthening economy.

## *Urban Expansion and Residential Segregation in Santiago de Chile*

### *Allende*

At the end of the 1960s, a number of people settled on the urban periphery in the form of squatter settlements. These were the campamentos or self-provided housing established through land invasions. During Allende's presidential period, more than 400,000 people settled in campamentos on Santiago's periphery (*Fadda and Ducci, 1993*).

### *Pinochet*

During the 1970's, the Pinochet government privatized the public housing market in order to diminish the Chilean housing deficit. As a result, the housing construction rate increased by approximately 100,000 units per year until the end of the last decade (*Fadda, 2000*). Land regularization and slum eradication programs were initiated in the 1979 Urban Development Policy. This program was developed to “promote the harmonious growth of the city and peripheral housing development” (*Fada, 2000*). The first portion of the program involved the legislation of property on occupied sites and the installation of a basic infrastructure system. The second portion of the program was directed at encouraging families from precarious settlements to multi-family, low-income housing districts. Between 1980 and 1987, 139 campamentos were regularized through the construction of 53,322 public housing units designed to relocate approximately 150,000 families away from the affluent northeast sector of the city towards the peripheral neighborhoods (*de la Puente, 1990*). Most of the publicly subsidized units in Santiago, largely consisting of 350 or more units, were located at the fringe of the metropolitan area with

the greatest concentrations of this housing in comunas, where land costs were lowest in largely low-income districts.

The Chilean economy also strengthened greatly under Pinochet. More international businesses began to invest as a result of Santiago's economic stability. The wealthier population of Santiago increased as Santiago became an internationally desired place to live as a result of its modernity, efficient transportation systems, and strong economy. These wealthier residents of Santiago were either concentrated in the downtown areas or in the suburbs, where they were afforded more room and larger houses. Breaking down the distribution per capita of the footprint according to income levels, the lowest quintile of the population accounted for an ecological footprint of 0.4 hectares per person, while that of the highest quintile accounted for 12 hectares per person (*Fadda, 2000*).

### ***Resulting Urban Expansion***

Due to the strengthening economy and social housing policies, Santiago's urban area expanded from 35,000 to 65,000 hectares between 1979 and 1995. During this period, the population also increased by 20% from approximately 4 million to 4.8 million inhabitants (*Fada, 2000*).

### Negative Effects of Urban Sprawl

#### *Pollution*

This expanding urban footprint has resulted in urban sprawl and high rates of pollution. Santiago is considered the 8<sup>th</sup> most polluted capital in the world (*de la Paz, 1999*). On some days, visibility is decreased immensely due to the heavily polluted air. As one travels outside of



Santiago and into the Andes, a thick layer of smog can be viewed, hovering over the valley that encompasses Santiago.

### *Infrastructure*

These developments on the urban periphery have caused problems for the local authority, in terms of extra amenities, infrastructure, and facilities. They have also added a significant burden to the residents to access amenities, such as work and health care, that typically exist in the central area of Santiago, as my research depicts. This process also worsened the socio-spatial segregation of the city by increasing the distance between rich and poor neighborhoods (*Jiron, 1995*).

### *Past Transportation Policy in Santiago de Chile*

By the early 1970's, traffic congestion and pollution became a major issue in Santiago. As a result, the government created the Urban Transport Commission 1981. Initially, this Commission had two goals. The first was to develop short-term solutions to the urban transportation crisis and the second was to develop long-term planning goals. Yet its vision was inherently damaging to Santiago because it separated all land use and transportation planning processes. The two were seen as separate identities up until the late 1990's and early millennium (*Zegras, 2005*).

The liberalization of the transportation market in 1975 allowed almost anyone who lived in Santiago to obtain a bus permit and drive the routes through the city. The government's goal in increasing accessibility to these permits was to increase access and the frequency of road based transportation systems. While it did achieve this goal, it also led to even more pollution, congestion, and an increase in accidents and bus fares through the late 1980's. The democratic

regime in the early 1990's brought some form of deregulation into the transportation system, but it was too weak to diminish the growing pollution problem.

### *Current Transportation Policy in Santiago de Chile*

In 1990, Chile authorities introduced new urban transport policies that would prioritize and modernize the existing transportation systems. Its main goals were to avoid the economic and technical collapse of the transportation system, to enact *licitación*, and to eventually expand routes and maintain stability in the future. The concept of *licitación de recorridos* is a technical and legal tool that permits administrative authority the power to determine what types of vehicles or public transport services and their routes can be on the road during high pollution times, natural disasters, and city emergencies. Through this tool, the authority can regulate the city's public transport when it is necessary for "public good." It also allows the city to correct the distortions of the free market in public transport, avoid the intervention of the State when it is not needed, and still take advantage of private incentives (*Cruz Lorenz, 2001*). Through this process, Santiago has reduced the use of vehicular parking, increased the quality of service of the public transportation system, reduced pollution rates, formalized the bus operators' jobs, and implemented fare readjustment plans to decrease fares for those who can demonstrate a minimal income.

These improvements to the public transportation system are evident throughout central downtown Santiago. Their METRO system is one of the most highly efficient subway systems in the world. The METRO runs every minute during peak times and every minute and a half during off-peak times. The routes are efficiently planned, and connections are simple and easy to understand. Yet the METRO is more expensive than the bus systems and does not run out to

urban periphery cities, such as Pudahuel. Therefore, in order to access the METRO from Pudahuel, one must take a bus closer into the city center and then use the METRO. Yet this doubles the cost of transportation each way. For the majority of women that I spoke with in interviews, surveys, and focus groups, this multi-modal method of transportation is not an option due to increased costs. As a result, they are forced to use the much slower and less secure bus system.

#### **IV. A Description of Pudahuel, Santiago de Chile**

Pudahuel is the third poorest district of Santiago. Here, 17,000 new public housing units were built between 1989-1994. Today, 32.1% of residents live below the poverty line (*Zegras, 2005*). Pudahuel is also the most polluted comuna in Santiago. Wind patterns channel accumulated smog towards this part of the city. The watercourses that flow from the mountain run through the city before reaching Pudahuel. By the time that it reaches this comuna, it is full of wastes that are hazardous to the residents. These high levels of pollution concentration are exacerbated by the lack of equipment and services available to counteract it.

##### **The Women of Pudahuel**

Through my research, I examined the perceived transportation barriers that exist for female Pudahuel residents in accessing work and medical services. These barriers include the distance from Central Santiago and high-income neighborhoods. They also include safety considerations, as Pudahuel is ranked 17<sup>th</sup> out of 134 districts of the country for drug use (*CONACE, 2002*).

In Pudahuel, women are responsible for childcare and child rearing and there is a high proportion (61%) of women who stay in the neighborhood as housewives. As a result, more

women perceived the lack of facilities, including schools, health care facilities, and markets, than men.

While such a high proportion of women do have the role of “damas de las casas,” many women that I encountered worked part-time to full-time shifts. A large proportion of these women were single, without the assistance of an extra income. These women expressed the same perceived lack of facilities and amenities in their neighborhood, but also discussed the added burden of accessing transportation to and from work. Even the majority of women who now stay at home to raise the children discussed their previous work experiences and burdens of inaccessibility. It became clear to me that both working and non-working women were faced with the same issues of inaccessibility and a perceived lack of safety. These burdens were heightened with individual variables, such as income level, number of children, distance from their home to work and healthcare facilities, and method of transportation.

## **V. Policy Implications based on Findings**

### Background Information

- ◆ In regards to civil status, 50.5% of the women were married, 33.1% were single, while the rest were separated.
- ◆ 33.8% of the women worked a formal job for income; 15.4% were currently looking for a job, 34.5% identified themselves as “stay at home moms,” 5.4% were students, while the rest worked informal jobs or were living off of a pension.
- ◆ 60.3% worked the normal day shift, 4.1% worked the night shift, 15.1% worked only during the morning, 6.8% worked only during the afternoon, and 13.7% worked combination of shifts.

### Child-Friendly Transportation Services

The minimum age of the women surveyed was 18 years, the maximum age was 58 years, and the average mean was 35 years. While the range of ages was broad, the majority of women that we surveyed were between the ages of 30 and 45. This has implications on policy suggestions, as many had older children who were already in school or working. Those who had younger children were more in need of child-friendly public transportation systems, such as the METRO. This includes stroller accessibility modes of transportation and policy that favors seating room for mothers with young children. The majority of women living in Pudahuel took the bus more than the METRO to access work and medical centers. This mode of transport made it difficult to bring and carry young children while traveling, especially during peak hours when the bus was crowded and the majority of people had to stand. While some kind of “unofficial” bus policy existed for people to give up their seats to women who had young children, this usually did not happen. Therefore, many women were forced to carry their children and groceries; be aware of others and “pick-pocketing”; and steady their balance while traveling for long periods of time. Some form of official policy must exist that designates “child-friendly” seating, especially during peak hours. This would make the journey much more comfortable and safe for women traveling with young children.

### Reduced Fares for Low-Income Families

Of the women surveyed 78% had between 3 to 6 people living in the same household, under the same income. The majority of women, 53%, had a monthly familial income under \$39,678 pesos (\$79.00), while 26.5% had a monthly familial income between 39.678 y 67.658

pesos (between \$79.00 and \$135.00). These findings indicate a demand for transportation policy that allows for discounts for those that can identify need, based on a monthly income. As stated above, findings indicate that the majority of women would prefer to use a multi-modal transportation system but are unable to due to increased costs of the METRO. They are forced to take the much slower, less safe, and less reliable bus system. For example, 65% of the women used the bus to travel to work, 9% walked, 3% biked, and no women reported using the METRO. To access medical centers 53.1% walked, 37.7% took the bus, 4.6% drove, and no women reported using the METRO. During the focus groups, the women stated that even the bus becomes very expensive without any form of discount for low-income families. In one case, almost 30% of a participant's income went into traveling to and from work every week. With these situations, the women are unable to spend extra money, and in many cases, provide for their families. My findings indicate the need for reduced fares for those that are in desperate need of it in order to access work and health care.

#### Extension of the METRO to Pudahuel

Of the women surveyed, 22.1% spent one hour traveling to work; 33.8% spent 1-2 hours, and 25% spent more than two hours. In terms of accessing medical centers, 49% of the women spent less than 20 minutes; 36% spent 20-40 minutes; 11.5% spent 40-60 minutes; and 4% spent over an hour. (It must be noted that the women were surveyed in medical centers around Pudahuel, which is why the majority of women spent less time accessing medical centers than accessing work.)

The extension of the Trans Santiago METRO into Pudahuel would decrease the majority of women's time spent traveling to work. As stated above, due to the inaccessibility of

the METRO, the majority of women were forced to use the bus system, which took a lot longer due to the number of informal stops and reduced speed capability. While the METRO was extended into other urban periphery comunas, such as Florida to the South and Las Condes to the North, these comunas generate higher familial incomes and are undergoing more economic development than Pudahuel. Malls, restaurants, and business offices abound in these locations, while they are still relatively absent from Pudahuel. As a result, the majority of those who would use the METRO in Pudahuel would be its residents. And a large amount of these people would not be able to afford a ticket without reduced fares, which would ultimately hurt the private transportation system.

### Improved Safety Features

The main emphasis of this research project was to determine the perceived level of safety of these women when accessing work and medical centers. "Safety" was categorized into two areas; one in regards to delinquency, (robbery and assault); the other in regards to traffic accidents (driver's capability and attention to the road). In terms of delinquency, 47.1% of women felt very unsafe when they traveled to work; 35.7% felt unsafe; 12.9% felt safe; and 4.3% felt very safe. When accessing medical centers, 38% felt very unsafe; 37% felt unsafe; 23.1% felt safe; and 2% felt very safe.

This data suggests a prevalent lack of perceived levels of safety when using the transportation systems. Many of the women that were interviewed in the focus groups and personal interview knew someone who had or personally experienced some sort of violent experience while using a transportation system. Improved lighting around the stops, increased

patrol watch, and more formal and centralized stops would provide for a safer environment while the women waited for the bus.

In terms of traffic accidents, 45.7% felt unsafe while traveling to work; 37.1% felt very unsafe; 10% felt safe; and 7.1% felt very safe. While accessing medical centers; 42.3% felt unsafe; 28% felt very unsafe; 27% felt safe; and 2% felt very safe. Many of the women interviewed expressed concern with the drivers collecting money while they drove. While using the bus system, I personally felt uncomfortable with many of the drivers swerving around cars, not paying attention to the road, and driving at higher speeds than the posted limit. Policy must be aimed at improving driver's ability to concentrate and reduce speeds while on the road. Strict fines should be imposed on bus drivers who exceed the legal speed limit and who disobey traffic laws. In order to improve concentration, money collection systems should be set up in order for the driver to have the sole responsibility of paying attention to the road.

## **VI. Research Priorities for the Women of Pudahuel**

The transportation system throughout Santiago is undergoing significant changes as a result of an increasing population and economic development improvements. Residents who live in and around the city and in wealthier comunas, such as Las Condes, have the opportunity to utilize the newly improved bus systems and efficient METRO subway system. As a result, they can enjoy shorter rides and waiting times, safer and cleaner environments while traveling, and increased accessibility throughout the city. As the city and private market strive to improve the bus systems to encourage multi-modal transportation, Santiago is becoming popular on the international transportation scene. Yet what is neither depicted nor explored are the transportation and day-to-day experiences of residents who cannot afford to live near the



METRO lines and whose bus systems have not been improved as a result of their distance from the city center. The paradox with this relationship is that these are the people who need affordable, safe, and efficient transportation the most. They are the ones traveling the farthest distances in the poorest areas. Furthermore, little research has been performed regarding these transportation experiences and problems. The majority concentrates on the transportation problems and improvements related to the downtown center and METRO lines. In order to improve the transportation systems in places that exist along the urban periphery, more interdisciplinary research must occur on the residents that live in these areas, the land use and development that is occurring in these areas, and the creation of transportation/land use models that will benefit both the residents and economy. Only then will the process begin in improving the transportation costs, trip times, and safety for the women who live in areas such as Pudahuel.

## Data Charts

### Familial Income Chart

1° QUINTIL: Families with monthly incomes under \$79.00.

2° QUINTIL: Families with monthly incomes between \$70.00 and \$135.00.

3° QUINTIL: Families with monthly incomes between \$135.00 and \$213.00.

4° QUINTIL: Families with monthly incomes between \$213.00 and \$400.00.

5° QUINTIL: Families with monthly incomes above \$400.00.

	Frequency	Valid Percent	Cum Percent
I	62	53	53
II	31	26,5	79,5
III	19	16,2	95,7
IV	4	3,4	99,1
V	1	,9	100
Total	117	100	

### Employment Status of the Women Surveyed

	Frequency	Valid Percent
Working for an income	44	33,8
Without a formal job but is employed	6	4,6
Student	7	5,4
Retired	2	1,5
Housewife	45	34,6
Other situation	5	3,8
Total	130	100

### Principal Method of Transportation for Work

	Frequency	Valid Percent
Walking	9	12,7
Bike	3	4,2
Bus	53	74,6
Car	1	1,4
Colectivo	2	2,8
Other	3	4,2
Total	71	100,0

### Duration of Time to Travel to Work

	Frequency	Valid Percent	Cumulative Percent
Less than 30 minutes	13	19,1	19,1
30 min - 1 hour	15	22,1	41,2
1 hour- 2 hours	23	33,8	75,0
More than 2 hours	17	25,0	100,0
Total	68	100,0	

### Principal Method of Transport for Accessing Medical Centers

	Frequency	Valid Percent
Walking	69	53,1
Bike	2	1,5
Bus	49	37,7
Car	6	4,6
Colectivo	1	,8
Taxi	2	1,5
Other	1	,8
Total	130	100,0

### Duration of Time to Travel to Medical Centers

	Frequency	Percent	Cumulative Percent
Less than 20 min	63	48,5	48,5
20 - 40 minutes	47	36,2	84,6
40 minutos to 1 hour	15	11,5	96,2
More than 1 hour	5	3,8	100,0
Total	130	100,0	

## VII. Contact Information

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\*Women that were interviewed for this research project were unidentified due to personal concerns. No contact information was retrieved. Persons listed above assisted in the recruitment of these women, in the retrieval of information useful to my research, and in providing areas in which to work and hold the focus groups and interviews.

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