

CASE STUDY

ELLA SE MUEVE SEGURA

mujeres & transporte



SANTIAGO CHILE

MARCH 2018

RESEARCH TEAM:

Lake Sagaris PhD Planning & Community Development

Magdalena Rivera Anthropologist

Nathalie Zamorano Sociologist

Gonzalo Cancino Sociologist

Ignacio Tiznado-Aitken (c) PhD Transport engineering

Ignacio Olivo Master of Science Transport engineering

Daniel Lanfranco Anthropologist

Study led by Heather Allen

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FOUNDATION

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1. INTRODUCTION

We move and interact with our environment through our bodies: women's bodies differ, biologically, from men's, but above all different cultures assign a complex bundle of very different perceptions, obligations and roles to each. These differences are further enhanced by personal, collective and cultural histories. Combined with discrimination and, in some cases, physical limitations, violence and segregation, these differences often entail significant inequalities that affect women's ability to participate, to contribute to society, and to develop to their full potential.

The research presented in this case study, carried out by the Laboratory for Social Change, the *Ella se mueve segura* (ESMS) partner in Santiago Chile, clearly reveals that women's travel differs significantly from that of men, in ways that -- if not considered within the transport system -- limit their ability to participate fully.

To achieve a fair and truly inclusive transportation system, planners need to shift their attention away from an often male "average" user, travelling between home and work or school, to consider care-related trips and how people's travel needs and capacities change throughout the life cycle. For both women and men, transport planning needs to contemplate both production (the economy) and reproduction (education, recreation, procreation and related activities). Transport systems must also respond to how these vary as people live through the different phases involved in the life cycle, particularly new needs that arise during pregnancy, child raising, care for the elderly or the disabled, and other vital social functions.

Sexual harassment reflects high levels of violence, discrimination and the resulting inequities. As occurs with traffic victims, we often see women blamed for experiences of harassment – due to how they dress, behave or when they move through the city. The aggressor often remains invisible, enjoying an impunity that encourages repetition, even escalation of this harmful behaviour. In Santiago we have concluded that follow up to this study should include a close focus on the perpetrators, as discussed in the final sections.

This study underlines a series of interlinked realities that must be addressed if we are to achieve sustainable transport, with equity, in Latin America. As occurs with work, women suffer a double burden of violence, experienced as necessary precautions in the face of delinquency, which affects the whole population, and the additional weight of sexual violence, which may be accentuated even more due to their age, care- or work-based responsibilities. As Tilly documents, in his foundational study on democratization (2007), discrimination of this nature, against specific categories of people, undermines our new democracies, weakening their effect and limiting their capacity to produce sufficient social, cultural and economic benefits for the whole population (CAF 2017).

Inequalities due to gender discrimination must be understood in a context of extreme inequality. Earlier this decade, Chile joined the Organization for Economic Cooperation and Development, but it remains one of the most unequal countries in the world. Its Gini coefficient stands at 50.5, with 1 considered perfect equality. Even this indicator fails to capture the extent of inequality however, since:

...the richest 10% earn 26 times the poorest 10% (SERNAM, 2011), more than doubling the OECD average of 9.6. Wages for almost three-quarters of the population (70%) are under CLP400,000/month (US\$563), while the average is CLP260,000 (US\$366), with many earning far less ... Moreover, with a total annual income of US\$6.3 billion each, Chile's five richest families each receive the equivalent of one million people.

Matamala 2015, cited in Sagaris et al. 2017

Chile's gender gap has been well studied and reveals that, while girls and boys start out about equal in school, as they advance with their education, enter the work force and then retire, the gap widens. As

women and men move into their 60s and older, this gap reaches 50%, mostly reflecting how low women's incomes are compared to men's (Comunidad Mujer 2016). Sexual harassment and violence are not the only factors, but they are important mechanisms for limiting women's social, political and economic participation. Public transport and, in general, a sustainable transport system with equity have an important role to play, then, in social inclusion and the full realization of Chile's potential.

The rest of this case study starts by summarizing relevant contextual information for Chile, including general figures and the relevant legislative framework; then examines the transport system and specific issues regarding women and transport. The following section summarizes the qualitative and quantitative methods used in the ESMS study, and how they were applied in Santiago, in a participatory action research (PAR) framework.

The final sections explore the implications of this research for women and for transport systems; good practices and tools to address the problems raised; and suggests the way forward for research and experimentation in the living laboratories of cities, to develop working solutions for the many different actors involved, at multiple levels and scales.

2. THE CONTEXT: CHILE NOT AS "MODERN" AS WE THINK

In Chile, being born man or woman makes you different. Even during pregnancy, the receiving environment has different expectations for girls and boys and what they will become throughout their lives. (...) Thus begins the cycle of gender inequality. It is a harmful social construction for women, especially if we take into account that strictly speaking boys and girls have the same potential, and in the early years girls even display better communicative, social, adaptive and cognitive skills

Longitudinal Survey of Early Childhood, ELPI, 2010 and 2012

The status of women in Chile reflects broad and deep gender inequalities, composed of economic, social, cultural, accessibility and political factors. According to the INE, "Men earn more than women for any level of education, in any type of employment (self-employment, employers and employees), and in both large and small firms" (INE, 2015). Using the gender gap index developed by the World Economic Forum (WEF, 2016), Chile ranks seventy out of 144 countries, far behind others, such as Bolivia, Cuba, Tanzania, Kazakhstan, Thailand or Mexico.

As of 2017, Chile's population stood at 17,574,003 people (Census 2017), rising at an average annual rate of 1.06% since 2002. Slightly over half (51.1%) are women, 48.9% men. Women's average life expectancy at birth is higher (83 years) than men (77 years), making them particularly sensitive to issues affecting the mobility and social integration of older adults.

Metropolitan Santiago, the national capital, is home to 40.5% of this population, 7,112,808 people. In Chile there are 23,2 habitants per km², rising to 461.7 inhabitants per km² in Santiago, levels highly favourable to sustainable walk-bike-bus-Metro forms of transportation. Wealth, however, is highly concentrated in just four comunas (municipal jurisdictions) on the city's eastern edge, while poverty is distributed throughout the remaining 48, and heavily concentrated in peripheral comunas, such as El Bosque, the locus of parts of the study presented here.

Segregation, the product of "eradication" policies applied by the military regime (1973-1990), is therefore extreme, with most comunas consisting of relatively homogenous groups with similar incomes. This means that large groups of the lowest-income households are concentrated in specific municipal jurisdictions, leaving few resources for dealing with major problems. Although there are some

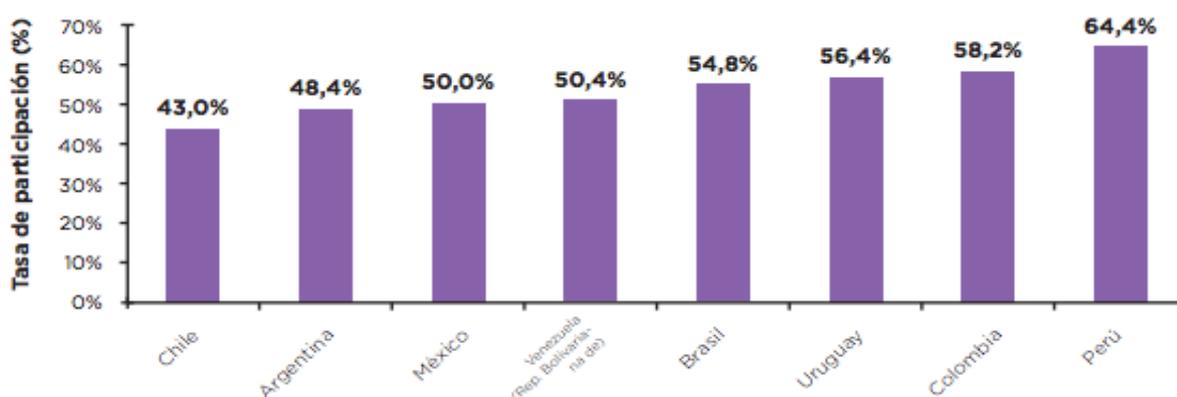
redistributive measures within national policies, these are far from enough to offset the enormous social differences that result from segregation.

The metropolitan region of Santiago also suffers from the very limited decentralization policies applied by the regime, which left behind a highly fragmented governance system. This consists of planning silos, in which regional secretariats of national ministries plan housing, or public works, or transport, in isolation, with no formal coordination among them. The metropolitan government consists of an appointed governor, with no planning, taxation and very limited fundraising powers, and a regional planning commission (CORE), whose representatives have only been elected since reforms in 2016. In recent decades, Chile has experienced strong economic growth, with official poverty rates falling from 26% (2000) to 7.9% (World Bank, 2017). As mentioned in the introduction, growth has accentuated extreme income concentration, leaving Chile among the most unequal countries in the world (World Bank, 2012). Neo-liberal policies inherited from the regime have created two-tier health, education, social security, and other systems, which provide luxurious state-of-the-art services to a small minority, while the majority face line-ups and often deficient access to services vital for social equality and integration.

2.1 WORK, MOTHERHOOD AND POVERTY

Women's participation in the work force has risen significantly, but their wages remain 30% less than those of men with equivalent training. In Latin America in general, women's labor participation rose from 41.6% (1990) to 54% (2013), with Chile lagging, at just 43%, among the region's lowest (Figure 1). In 2013, it reached a peak (48.3%), but remained well below men's participation rate (72%, ENE, 2013).

Figure 1. Labor participation of women in Latin America, 2012 (percentage)



Source: INE "Women in Chile and the labor market". Female labor participation and wage gaps. 2015

As with trends elsewhere, women in Chile start out with equivalent or even slightly improved social and cognitive skills, but cultural norms reinforced by the ultra-conservative military regime and its civilian allies mean that today they are responsible for a disproportionate amount of domestic work, averaging 4.7 hours/week on care compared to just 2.8 hours by men (Comunidad Mujer, 2016), time that takes away opportunities to improve their education, their performance at work, or to build the networks that allow them to advance in society.

Motherhood is associated with poverty, particularly for girls with lower incomes. In Chile, 32,000 women under the age of 20 have children (INE, 2011), most from families living in poverty. In practical terms, for the poorest quintile, 14% of girls 15-19 years old are mothers, and 10% have more than one child. Of the richest quintile, only 2% of this cohort have children, none more than one. This is

particularly serious since over half (53%) of these mothers do not study or work, with serious consequences for their future and their whole family (Comunidad Mujer, 2016).

2.3 LEGISLATION AND GENDER VIOLENCE

Gender violence directly affects around 2.8 million Chileans (MINMEG, 2017), 15% of the population, with relevant consequences for their whole families. Girls and women are exposed to a wide range of economic, psychological and physical violence; sexual harassment; and intimidation. Femicide, the killing of girls and women because of their gender, is the most extreme form. Habits of violence, including gender violence, were reinforced by the extreme brutality of the military dictatorship, which practiced particularly fierce forms of sexual violence on women and girls (Rettig et al., 1991). In recent years, however, Chile has made significant progress in exposing this problem and generating collective values condemning its practice.

Chile's main legal instruments to deal with gender-related violence include:

- The **Intrafamily Violence Law** (Law No. 20.066, 2005) that protects women from abuse threatening their lives, physical or mental integrity within the family or marriage. In 2010, the Ministry of Justice modified this law (Law No. 20,480) legally defining the crime of femicide (SERNAM, 2016).
- The **Labor Code** establishes that labour relations must always be based on a treatment compatible with the dignity of the person and sexual harassment is forbidden, particularly improper behaviour, such as requiring non-consensual acts of a sexual nature, using threats to employment or opportunities (Law 20,005, article 2, Labor Code).
- The **Penal Code** defines sexual aggression as the introduction of objects of any kind into the vagina or mouth (Art.365 bis) and / or any act of sexual significance carried out through bodily contact with the victim, affecting the genitals, anus or mouth, even when there is no direct physical contact (Art.366). From this perspective, touching or rubbing could be considered a crime under current legislation, but these acts of sexual harassment are seldom recognized or sanctioned.

Situations of harassment and / or sexual abuse that occur in public transport are not classified as an offence, leaving judgment to individual interpretation. As with the other cities included in this study, in Santiago our definition of sexual harassment included: lascivious glances, words of a sexual nature, groping, rubbing, persecution, public masturbation and exhibitionism. It is urgent to improve the legal framework to guarantee the safety, security, physical and mental integrity of women.

3. SANTIAGO AND DAILY TRAVEL: TRANSPORT DESIGNED FOR MEN

3.1. METROPOLITAN SANTIAGO TRANSPORT SYSTEM

As mentioned, Metropolitan Santiago has a population of 7,482,635 people (INE data, 2017 projection), 51% women, and produces 40% of the country's GDP. In line with global trends, the population is aging and experiencing strong immigration, mainly from other Latin American countries. Administratively, it is divided into 52 comunas (municipal jurisdictions), each with its own elected mayor and city council. A

presidential appointee with no planning powers heads the regional government, whose councillors were elected for the first time in the 2014 elections.

The Santiago transport network consists of five Metro (underground train) lines (103 km), a metro-train (TrenCentral), Transantiago (buses), intercity buses, collective taxis. Powerful advocacy and the resulting infrastructure improvements have caused cycling to soar, from just under 2% (2001) to 4% (2012), and it is now estimated to have reached 6% of daily trips. Every day, two million trips are made on the Metro, three million on buses, run by private companies who bid on concessions. The Metro is managed by a semi-autonomous, government-controlled company, while Transantiago is supervised by an office in the Ministry of Transport and Telecommunications, known as the Directorio de Transporte Público Metropolitano (DTPM).

Only 40% of households own a car: as with income, these are concentrated mainly in three high-income comunas on the city's eastern edge: Vitacura, Providencia and Las Condes. Every working day people make more than 18 million trips: walking (34%) and cycling (4%), riding public transport (26%) and driving cars (25%). In six comunas, however, more than half of all daily trips are made by walking, with women responsible for most (up to 80%) of these trips. This would not be a problem if each comuna had good access to a variety of services of good quality. However, most important services, including jobs, are concentrated in the central and eastern sectors of the city, forcing low-income people to travel 2-4 hours daily and spend a significant proportion of their income (in some cases over 25%) on transport (Sagaris & Tiznado, 2017).

3.2. TRANSPORT INSTITUTIONS: A CENTRAL PROBLEM

Unlike other countries, in Chile, the metropolitan regional public transport system is managed by the Ministry of Transport and Telecommunications. As mentioned earlier (3.1) the region's "Intendente" (or governor) is a presidential appointee with no planning powers. Instead, transport planning is conducted by the national Ministry of Transport and Telecommunications, through the Metro agency and the Transantiago public-private bus system described in the previous section.

Created in 2013 — six years after implementation of major changes in the public transport system, the DTPM supervises contracts with private bus firms, while another agency within the transport ministry, SECTRA, conducts studies and recommends planning measures, and other instances supervise traffic. The bus system, Transantiago, was implemented with a "big bang" in 2007 — these involved major system-wide changes that virtually paralyzed the city, generating a public backlash and bitter criticisms that remain to this day, expressed in fare evasion rates that generally hover at 30% or more.

A national plan (2009-2025) is supposed to guide transport system development and provide a suitable response to congestion, but in practice most major transport investment has gone into the Metro and urban highway concessions, which have boosted car use and congestion. Indeed, congestion, pollution of air, water and noise, high rates of death and disability due to collisions, have all become the hallmark of Santiago's poorly planned transport system, despite significant gains by cycling advocates in the past decade.

3.3 MINISTRY OF WOMEN AND NATIONAL WOMEN'S SERVICE

In the past 20 years, particularly under the two Bachelet presidential periods (2006-2010, 2014-2018), gender equity has become a key issue, reflected in the development of the national women's service (SERNAM) and its progress to ministry status, in 2016, when it became the Ministry of Women and Gender Equity. This ministry's main tasks are organized into the categories: Violence against women; Woman and work; Sexuality and reproduction; and Women, citizenship and participation.

The Ministry's mission is to mainstream gender policies throughout the government, through the design, coordination and evaluation of policies, plans and programs. It works mainly at a regional level, through policies and programs that function within a Gender Agenda, whose main objective is to end inequality between women and men. For this purpose, it proposes new institutions, legal reforms, public policies and a cultural change to favor women's autonomy.

In September 2017, one outcome of the Santiago ESMS study was the realization, for the first time in Chilean history, of a workshop to develop an urban livability agenda within the national gender equity agenda. The purpose of the workshop was to generate contents regarding territory and livability as part of the new National Plan for Gender Equity.

4. METHODS: ELLA SE MUEVE SEGURA/SAFE AND SOUND, SANTIAGO

4.1 PAR: GETTING THE MOST OUT OF DIVERSE KNOWLEDGE SOURCES

In Santiago, the Laboratory for Social Change (the Lab) led research on women's experiences with sexual harassment during their public transport travel as part of the ESMS study, starting with access and finishing with egress trips, usually completed through walking. The Lab is a community-based research collaboration created by Living City (Ciudad Viva), a citizen-led urban planning organization, and the Department of Transport Engineering and Logistics, at the Pontificia Universidad Católica de Chile (PUC). The Lab combines a wide range of interdisciplinary research methods under the general umbrella of participatory action research (PAR), to bring in different kinds of knowledge, particularly experiential knowledge developed by citizens, technical knowledge from academics and engineers, and practical-theoretical knowledge developed by planners.

To establish the parameters, to better understand the magnitude of the challenges associated with sexual harassment, public transport and women's personal and collective experiences, we combined a representative survey of men and women from the Metropolitan Region, with focus discussion groups in three comunas (of low, medium, medium-high income), and collective analysis workshops with active citizen organizations, gender experts, transport engineering, sociology, anthropology, urban planning and other disciplines.

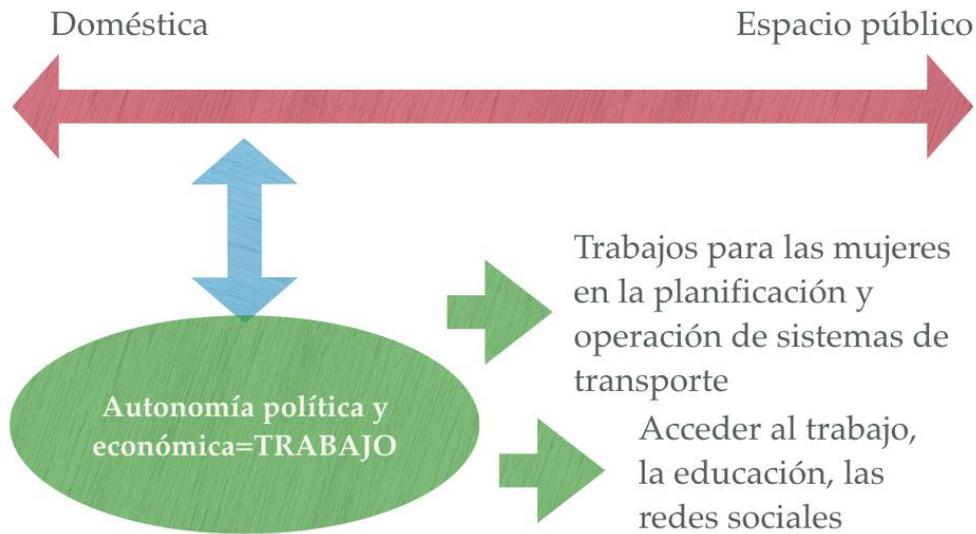
Thus, the study team was able to draw on a wide range of technical knowledge and experience: from the community, local and regional governments, and the university in study development, data processing, analysis of results and development of recommendations for policies, programs and further research. It was also able to benefit from the exchanges of experiences with the two other cities taking part (Buenos Aires and Quito).

DIMENSIONS AND MAGNITUDE OF SEXUAL VIOLENCE AND PUBLIC TRANSPORT SYSTEMS

To begin, we developed a theoretical framework to understand how violence in public spaces generally, and public transport as a strategic, mobile public space, could influence women's vulnerability to violence. Since domestic/family violence has been the primary focus of the relevant policy in Chile, we

examined the relationship, finding transport highly relevant to women’s access to education, work and social networks, all of which help reduce vulnerability to domestic and other forms of violence.

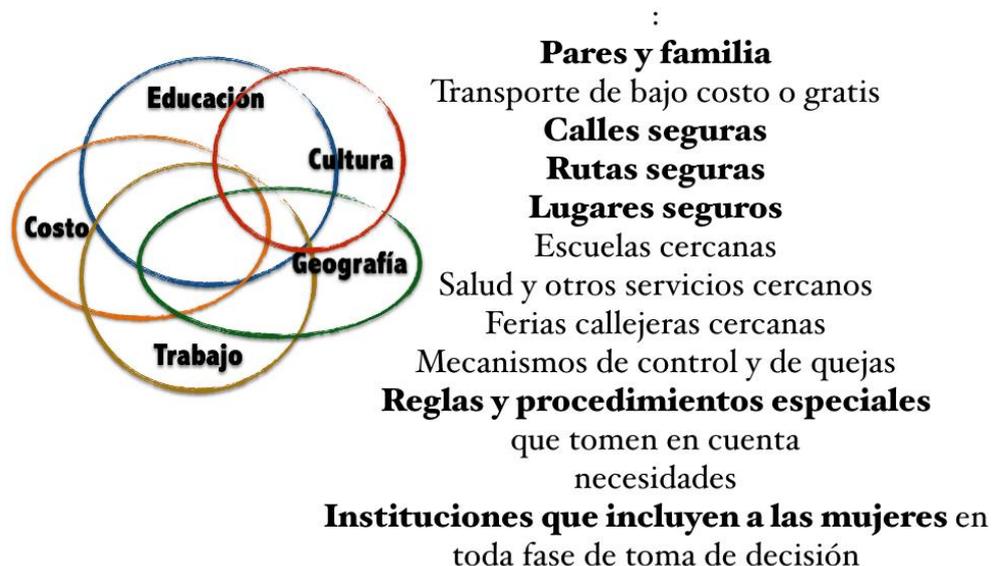
Figure 2. Gender violence occurs along a spectrum that includes public, private and intermediate spaces, including the mobile spaces of public and other forms of transport.



We considered violence against women as a continuum, that may be expressed in the domestic sphere, in public, or in intermediate spaces (figure 2). This highlighted the importance for women of being able to work in the different jobs associated with transportation, and the role of the transportation system itself in connecting women to the opportunities, services and other benefits of city life.

We then examined potential interactions between education, general cultural values, geography (distance from key destinations), work, costs could interact to reinforce the barriers or facilitate changes (figure 3), with a particular focus on transportation. Attitudes among peers and family, transport costs, the presence of safe streets and routes to and from public transport, the proximity or distance of key services such as schools, jobs, public offices and health clinics, all interact, influencing women’s perceptions of violence, safety and what constitutes permissible behaviour, including routes, times and purposes suitable for public transport.

Figure 3. Potential barriers and facilitators that interact with women’s access to the city and influence perceptions of violence and permissible behaviour.



Using this framework as the basis for looking at public transport, equality and social inclusion “made sense” to study participants and became the basis for the first advisory council meeting in Santiago. Participants from government, civil society, private sector (bus companies), cycling and other organizations considered it a realistic framework for examining the issues of interest. It also helped to link this relatively new interest in public transport to ongoing work on domestic violence, which was far more prevalent at the time. Thus, rather than creating an either/or framework, which could lead to fruitless debates about which violence is more serious or “important”, people could see the connection between them, their relevance to each other and to potential action for social change.

The *Ella se mueve segura*/Safe and sound methods that are part of the global structure of our collaboration with Buenos Aires, Quito and Heather Allen (FIA Foundation/CAF) contemplate both focus groups and a survey approach. These mixed methods are very common to our Lab’s work, as is the involvement of an advisory council to mobilize diverse perspectives, calibrate design, and ensure the relevance of the final results.

4.1 QUALITATIVE METHODS: FOCUS GROUPS AND PARTICIPATORY WORKSHOPS

Our study started from an initial overview developed prior to *Ella se mueve segura*, which provided an overview of the status of women in Chile generally, identified relevant actors among civil society and government bodies, and suggested possible areas of action for policy and social change. This preliminary study included a global and national literature review and interviews with key leaders on these issues, again, from public, private and citizen spheres.

Based on these results, we formed an advisory committee with relevant members, presented the conceptual framework summarized in the previous section, and received useful advice, contacts and contributions from our experts. Similarly, we selected three comunas, representative of the socio-economic diversity of Metropolitan Santiago: El Bosque, one of the city’s and the country’s most vulnerable comunas, on the southern edge of Santiago, 20 km from the city centre; Ñuñoa, a middle to high-income neighbourhood with a varied percentage of drivers, public transport and other users; and Santiago Centre, a mixed area with heavy use by non-residents and residents alike, central to the city’s imaginary.

We built on existing networks with community, municipal and public sector actors to invite and hold a focus group involving women only in each comuna (figure 4). The focus group methodology was developed by Dr. Lake Sagaris, director of the Lab, planner and professor of transport engineering, and Magdalena Rivera, anthropologist, with assistance from other Lab team members. Finally, we conducted a men-only focus group, conducted by Daniel Lanfranco, anthropologist, to calibrate men’s attitudes and potential for social solidarity among men and women to reduce, prevent and control sexual harassment associated with public transport travel.

In total, a focus group was conducted in each comuna: Santiago Centro (10 women), El Bosque (9 women) and Ñuñoa (11 women). The fourth was held in Recoleta (6 men). Results from the focus groups were extremely interesting in themselves, and contributed to shaping the survey instrument. Altogether, these focus groups provided important depths and insights, as the results presented here attest, allowing us to understand how people understand and act on their experiences with sexual harassment, in general, and on public transport journeys, and differences among men and women.

Figure 4. Moments during focus groups that explored the extent and the depth of women’s and men’s experience with sexual harassment and public transport.



Finally, during the ESMS seminar in Santiago (May 2017), we tested tools with potential for addressing gender harassment issues on streets and in public transport nodes. Of particular interest was the UN and our own local adaptation of the street audits originally developed by METREC in Toronto, and participatory mapping of diverse safety and security-related problems. These proved extremely effective in bringing together key players and local citizens’ groups to identify issues and potential solutions.

4.2 QUANTITATIVE METHODS: AN INTERCEPT SURVEY TO IDENTIFY KEY PARAMETERS

The survey was developed by an interdisciplinary team lead by two post-graduate students of transport engineering, Ignacio Tiznado-Aitken and Ignacio Oliva, in coordination with the qualitative researchers on the team, and two sociologists, Nathaly Zamorano and Gonzalo Cancino. Dr. Ricardo Hurtubia, a professor of transport engineering, advised, and other experts were consulted for survey development, particularly professionals working with the national census.

Exchanges with fellow researchers in Quito and Buenos Aires contributed improvements and provided for consistency across the three cities. The interception survey was applied at key public transport points in the three comunas of interest, from 19 December 2016 to 18 January 2017 (excluding Christmas and New Year's holidays). Bus stops and subway access stations were randomly selected, based on the quality of the environment (busy/isolated) and times (peak/non-peak). Nine women and three men applied the questionnaire, during four periods: two during rush and two off-peak hours. The survey itself consisted of 30 questions, taking 10-15 minutes to complete, using electronic tablets and software, which simplified subsequent data entry. Interviewers often accompanied interviewees on buses to complete the survey.

The sample is representative of men and women over 18 who use public transport in Santiago, Ñuñoa and El Bosque, with an error of less than 5%. A per comuna quota reflecting the relevant population was applied, and in total 804 surveys were completed, of which 790 were valid (386 women and 404 men). Of respondents, 790 responded to questions regarding access/egress to public transport, 749 regarding the Transantiago Bus system, and 424 the Metro.

4.3 DATA PROCESSING AND ANALYSIS

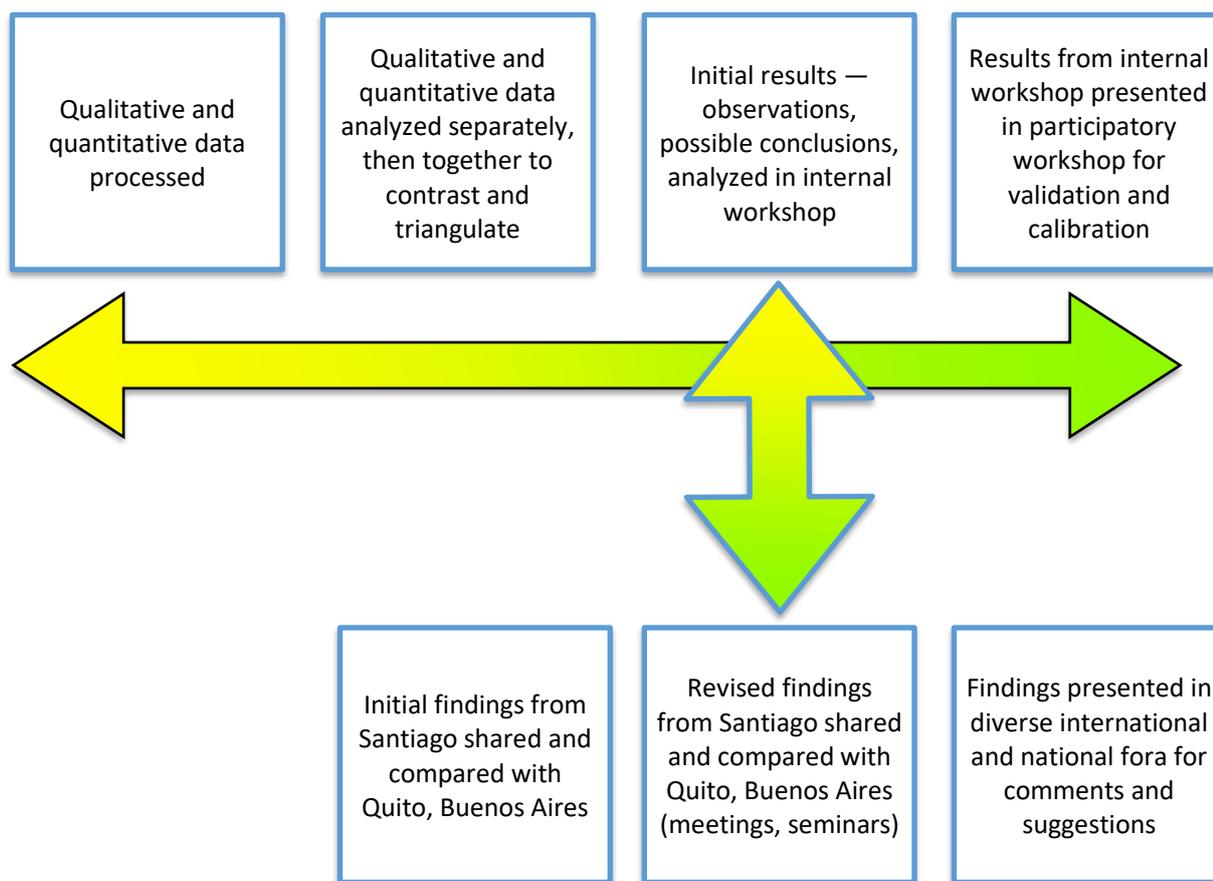
Given the novelty of the study and our interest in capturing potentially surprising elements, we were careful to separate the data processing phase from the analytical phase. Indeed, we conducted a series of iterative analyses to validate and triangulate observations and conclusions, taking advantage of internal opportunities — workshops with advisory board, university and other participants — and external events, including the ESMS seminars in each city, international transport and planning conferences, and several gender-focused events at CEPAL, the UN's Economic Commission, headquartered in Santiago.

Two concurrent studies, one with school children in El Bosque and the other an exploration of gender patterns in Santiago's origin-destination surveys (Sagaris & Tiznado 2018) enriched our contextualization and our understanding of both results and potential tools.

4.3.1 FOCUS GROUPS: DATA PROCESSING

Procedure for processing focus group data was kept relatively simple. We kept notes, recorded and prepared transcripts of each event, highlighting points of particular interest, narratives, discourse, language and other components of conversations. We tried using a qualitative software for analysis (Atlas T), but found that producing our own categorization and iteration, with diverse actors, provided more insights and simplified procedures in ways that facilitated more diverse participation. We then organized the key points that we had identified into categories reflecting types of experience (associated with the different types of harassment), times, attitudes, responses, expectations and policy proposals. We compared results for each comuna, and we also compared and shared our results for Santiago with the other two cities (Quito, Buenos Aires).

Figure 5. Data processing and analytical process. Arrows indicate that there was considerable back-and-forth, starting from very preliminary results (yellow shade), which consolidated (green) as feedback from diverse experts reinforced the strength of our findings.



4.3.2 SURVEY PROCESSING

Survey data was first evaluated and income data removed, using excel spreadsheets, and then processed using SPSS. The first iteration processed descriptive data to generate a general profile of respondents and responses. We then ordered variables and combined some categories to create new variables, in order to identify key dimensions of the problem, how widespread the problem is, and how it affects men and women.

This allowed us to develop tables summarizing how many people have experienced or witnessed harassment on public transport, how they have responded, how this influenced subsequent travel behaviour, and how this differed among men and women.

We also looked at how this could influence overall travel trends and policies striving to improve sustainability of transport systems and cities themselves. The Lab considers economic and environmental sustainability issues as they relate to cities and transport. In addition, its theoretical and other studies have focused on defining and studying social sustainability, which contemplates such issues as health and active transport, citizen organizations and people’s capacity for exercising their political, social, economic and cultural rights.

4.3.3 ANALYSIS AND CONTEXTUALIZATION OF RESULTS

As illustrated (figure 5), qualitative and quantitative data were first analyzed separately, then together, than re-presented for feedback during an internal team workshop, followed by a series of iterations that covered the wide range of actors with interest for this study. The Lab’s Advisory Council, with members

selected specifically for this study, was particularly important as it provided a stable group of expert advisors, and helped connect us with others doing similar research, or with similar interests, particularly the studies department of one of the bus companies (RedBus/TransDev) and staff within the national transport ministry.

The ESMS seminars in Santiago and Quito provided important opportunities for sharing our data with all three cities and a very diverse group of interested parties from Santiago and the national government. They also provided important firsthand knowledge of policies, programs and their results on-the-street in each city, helping to test potential methods and tools for the final reports and toolkits.

Similarly, seminars such as research seminars at PUC and general meetings of PUC's BRT+ Centre of Excellence (TRB 2016), whose members include PUC, WRI, University of Sydney and MIT, plus the Volvo Education and Research Foundation, offered important opportunities to receive feedback. Study results formed the basis of presentations (Equidad e inclusión en la movilidad de América Latina: un análisis de género, ECLAC Seminar, 5-X-2017; a global gender summit, hosted at ECLAC by Chile's national research organization, CONICYT, 1-XII-2017); and both poster and workshop presentations on equity topics at the Transportation Research Board (Washington, 2018).

There was a remarkable consistency between quantitative and qualitative data, with focus groups providing additional points and information of interest, as well as raising concerns and recommendations for future research.

4.4 ADVISORY BOARD

As mentioned, the Lab's participatory methods contemplate broad participation from actors in government, private and citizen spheres, with significant input from academics too. For this project, our Advisory Board included 15 people from: Ministry of Women and Gender Equity, staff and management from the public transport office (DTPM), civil society groups (Observatorio contra el acoso sexual en espacios públicos, Comunidad Mujer, Ciudad Viva), the PUC Centre for Sustainable Urban Development (CEDEUS) and the BRT+ Centre of Excellence, along with grassroots community representatives, and the studies director from a bus company (RedBus/TransDev).

For this study, we organized three face-to-face workshops to present our conceptual framework and study design (workshop 1), preliminary data (workshop 2) and results (workshop 3). We also conducted a "local expertise" workshop, in which advisory council members presented and commented on their own results and studies, their relevance to our study, and our study's usefulness to them.

In the international Seminar *Ella se mueve segura/Safe and Sound*, held in Santiago, 8-9 May 2017, members of the Advisory Board participated as commentators, contributing broader perspectives the problem.

5. RESULTS: HARASSMENT IS WIDESPREAD AND DEEPLY EMBEDDED

"...What's going on with me is what happens with most women, it's knowing that they can assault you at the bus stop, your home, anywhere. That's just an assault — what I mean to say is I can also be raped, beaten up. And if there's two or three of them, it's like women are always afraid of what could happen to us..."

Participant, El Bosque Focus Group, ESMS

Security in public space and specifically in public transport is a key issue for those who live in the city. Transport plays a fundamental role in people's lives, constituting a barrier or granting access to goods and services vital to human development, equity and happiness. According to Maslow (1948) after food, shelter and water, security is the second most basic need. Being unable to participate freely, therefore, seriously inhibits women's quality of life, their development and that of society as a whole. This becomes especially relevant in Santiago because the feeling of insecurity is permanent, as women are exposed to harassment and violence in their daily use of transport (SERNAM, 2012).

Women in Santiago depend on public transport to carry out various activities at different times. 52.5% of public transport users are women, 47.5% men (EOD, 2012). Their choices vary according to their own criteria, trip purpose, economic means, capacities, physical ability/disability, and their perception of security or insecurity. These ESMS studies — and Santiago is no exception — indicate that all of these are important considerations in women's choice of transport mode.

Feeling safe in the context of our study refers to being able to move freely, without any type of threat or aggression. The sense of security is key to understand how people, particularly women, use public space, and as such, it is an important indicator of quality of life (Fraile, 2007). Public space / transport is a socially constructed place, with its own meanings, related to the experiences and stories of each person (Mowl and Towner, 1995 in Scraton, 2005: 127): there are certain spaces, schedules and characteristics perceived as being more or less unsafe. Our results are consistent with general figures for the city overall, in which 79% of women report feeling insecure, compared to 59% of men (SERNAM, 2012). This sense of insecurity rises among lower income households, and older adults.

In the case of the Metro, its speed and comfort stand out, while the bus is important because of its proximity to the home and the access it provides to multiple areas of the city. Taxis (personal and collective) are less frequently chosen but are perceived as being more comfortable and safe. Cycling, whether on bicycles, public bike share and tricycles, are a way of life, an important working tool for some, and an object of desire for others who would like to use them more, but don't dare, mainly for security and road safety considerations.

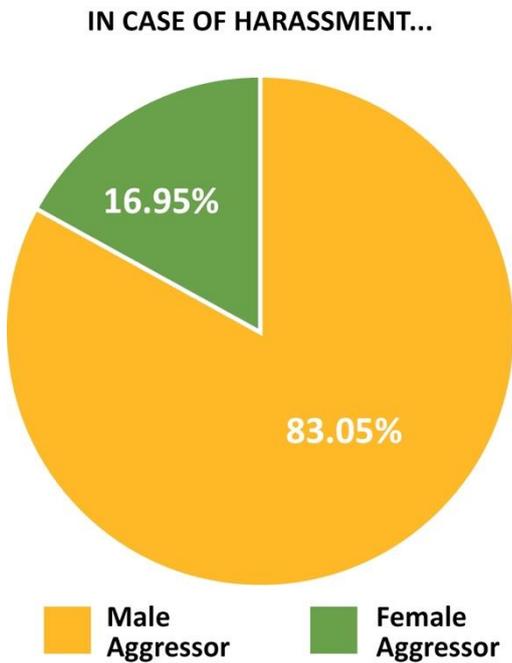
PERCEPTIONS OF SAFETY

In Santiago overall, 66% of the public transport users surveyed felt unsafe, with a significant difference among women (73%) and men (59%). Factors that increased travellers' sense of insecurity included (in order of importance):

- travelling in the dark (early morning, after sundown);
- waiting for the bus;
- overcrowding in buses and Metro cars;
- the walk to or from a bus stop/station;
- travelling alone;
- or travelling with children or older adults requiring assistance.

Only women (23% of women surveyed) reported travelling with children or older adults. Nine of ten women surveyed had experienced sexual harassment; one of 100 had experienced every kind, which is a very high rate given the seriousness and the impact on women's travel behaviour and attitudes to the city in general.

Figure 6: While most aggressors are male (83%), a significant number (17%) are female, a reality that requires further research as it has been seldom studied.



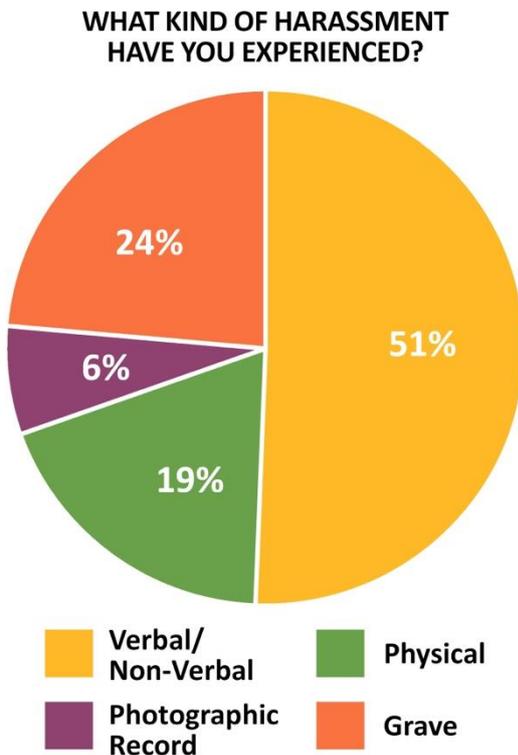
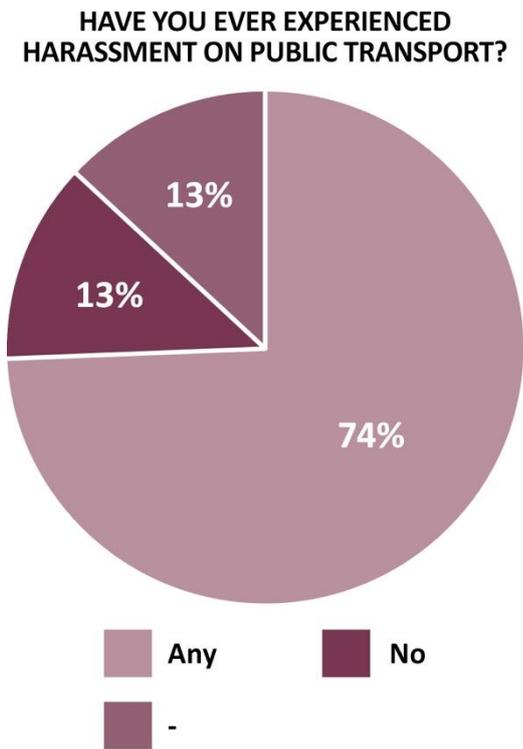
AGRESSORS

In virtually all cases (89% women; 74% men), the aggressor was male (figure 6). Of those affected (figure 7), half experienced verbal harassment or lewd gestures/looks; one of four experienced grave harassment (masturbation or exhibitionism); one of five physical harassment (sexual rubbing, crowding, handling).

These practices reflect historical and cultural constructions, such as the idea that public space is only for men, that women should stay at home, and that women who venture out are “fair game” or should be “punished”. When women occupy public space they can become victims of violence because others believe they “do not belong there” (Billy et al., 2015).

Women were aggressors in a small number of cases (17%). The practice of bullying is an integral part of a society that discriminates on the basis of income, race, gender and other characteristics. symbolic. This happens again and again, reinforced by economic inequalities, intrafamily violence and street harassment among others.

Figure 7: Overall perceptions of safety and types of harassment experienced by men and women, on public transport in Santiago. Own elaboration, using survey data for El Bosque, Ñuñoa and Santiago Centro.



HARASSMENT WHILE WALKING, ON BUSES AND IN METRO

Survey results clearly indicate that harassment occurs on all phases of the trips, access/egress (usually walking), on buses and on the Metro. This last was rather surprising, since Metro is generally considered “safer” because it has security guards, emergency buttons and other precautions. While verbal aggressions were most common during all three phases, physical aggression was commonest on Santiago’s overcrowded Metro, while the most serious cases of harassment (masturbation, exhibitionism) tended to occur on access/ingress trips.

Focus group results revealed all women had experienced regular, typically frequent, harassment in their travel through the city. In the Santiago focus group, their comments revealed that each woman had a personal curfew, after which she would not travel on her own. Several rounds of conversation revealed that these curfews coincided with their main transport preference (closing times for Metro at 10.30pm; reduced bus frequencies after peak hours and infrequent service after midnight) with women who also cycle showing the most freedom. Many of the latter said this reflected “not having to wait for buses at lonely stops”, crossing bridges late at night, or other factors.

Faced with these risks, some women simply opted to stay in their own neighbourhood, or to stay at home particularly “after dark”, a strategy with serious implications for women’s participation in social life. According to the survey, one in three women have decided not to travel due to the feeling of insecurity, limiting their access to work, services and social interaction. This emerged in the focus groups too:

“I don’t go out, unless accompanied by someone I know, who will return home with me.”

Focus group participant, Santiago Centro

Normal criteria for evaluating risk, such as dress or places considered safe, often fail in the case of sexual harassment, increasing the uncertainties of travel in the city. One woman in El Bosque reported coming through the La Cisterna intermodal station every day, and watching the same man harass women (including her) with words, gestures and inappropriate closeness, on a regular basis. Similarly, another said:

“I was going to class everyday along the same street, and there was a guy at the bus stop, very well-groomed, because we always distrust those who are dishevelled, that’s the prejudice... But this guy was very well put together, with a briefcase, and with his penis hanging out.”

Focus group participant, El Bosque

IMMEDIATE RESPONSES TO HARASSMENT

Both survey and focus group respondents revealed a remarkable and disturbing level of passivity in responses and this emerged in the men’s focus group as well. By far the most common was a passive attitude, followed by a verbal defence.

“In the Metro a young man began stroking his waist and parts below it. That made me feel very uncomfortable and I thought that since I am very shy I would not react, but in the end I did. Yeah, I reacted and I said, hey, you know what? You’re bothering me.”

Focus group participant, Santiago Centro

Least common was physical action, with pins being mentioned (in the focus groups) as part of the arsenal that mothers recommend to their daughters.

“You have to learn to defend yourself. If it’s good or bad, I don’t know, but I teach my kids to carry a pin. They all use large bags, or purses, or a computer. Whatever you have, I tell them, if anyone bothers you,

take a pin and boom! You shove it in. Why? Because I can't travel with my daughter every day. We've had enough cowardice! I tell her, no one will defend you, so you have to look after yourself. If some guy hassles you, stick him with the pin already."

Focus group participant, El Bosque

STRATEGIES TO AVOID OR DEAL WITH HARASSMENT

Together, survey and focus group respondents offered seven main strategies to avoid or deal with harassment. These were: travelling only when accompanied; remaining alert at all times; avoiding specific places and/or people associated with them; changing routes; changing transport mode; changing travel time; not travelling.

Table 1: What strategies do you use to feel more safe?								
Strategies	Day and night		Night		Day		Not used	
	Men	Women	Men	Women	Men	Women	Men	Women
Stay in own neighbourhood	41%	45%	7%	11%	3%	4%	49%	40%
Avoid specific places on way to public transport	31%	41%	26%	28%	2%	3%	41%	27%
Change route to public transport	16%	25%	18%	19%	3%	6%	63%	49%
Make all trips by taxi colectivo	16%	20%	24%	31%	3%	6%	57%	42%
Travel accompanied	11%	19%	9%	23%	2%	4%	77%	54%
Use private car	19%	16%	9%	12%	2%	1%	69%	69%
Attend self defense classes	12%	2%	4%	1%	1%	1%	83%	96%

Source: ESMS-Santiago survey data.

While travel-related harassment is clearly not the only factor in women's low participation in the labour force, it is reasonable to assume that it does play a role in their decisions about where to work, what jobs to take, and what shifts or working hours they are able or willing to take on.

STRATEGIES TO ENCOURAGE NEW COMMUNITY-BASED APPROACHES

Other initiatives emerged from our study, among them, the decision to conduct an audit of the security conditions in El Bosque. With the Women's Center, we summoned researchers, more than 30 neighbors, representatives of Carabineros and other institutional actors for a tour in the field, followed by a participatory mapping of safe and unsafe points. The audit allows to evaluate the social, physical and functional aspects of a specific environment. Identify how the physical characteristics of a neighborhood are adjusted to daily needs, taking into account the uses and perceptions of people from a gender perspective and how spaces are designed and managed from institutions. It generates a dialogue between the local authorities and the inhabitants to find solutions and achieve more entertaining and safe territories.

KEY IMPLICATIONS FOR WOMEN, FAMILIES, AND SUSTAINABLE TRANSPORT

As presented in more detail in previous sections, there is considerable, varied and important evidence that sexual harassment is widespread on public transport and ingress/egress trips, and that this affects

both women themselves, and the public acceptance and therefore future effectiveness of public transport. In short:

- Sexual harassment only has to happen once, to a woman directly or someone she knows, and women alter their travel habits as much as possible and permanently.
- Even lowest income women **prefer to take radio-taxis rather than risk public transport.**
- The **effects are lasting and inter-generational**, that is women teach their children, especially their daughters, to avoid public transport.

IMPLICATIONS FOR WOMEN AND THEIR FAMILIES

As we have seen, sexual harassment on public transport is widespread and deeply embedded in social mores and habits. Focus group respondents gave some indication of just how deeply these experiences mark those affected directly and those who see these kinds of situations occur on a daily basis.

“I have lived in the city center for years and I am afraid of moving around — by day, by night — it doesn’t matter. But I’ve learned never to go through lonely places. So, when I lived in the Yungay neighborhood, I used the north end, where the plaza, bars and restaurants and everything were. The bus came in from the north and I went down and walked or biked in that area. On a bike you can go really quickly, even at night, that helps, because I feel I’m in control. But south, toward the Alameda [where the Metro stations are], never. Because that was empty. There were only businesses by day, nothing at night, no people, no bars, no people walking, nothing.”

Focus group participant, Santiago Centro

For men, overcrowding was their greatest risk factor, both on buses and in the Metro, followed by bus stops. For women, survey results and focus group comments reinforced each other, underlining the double burden of risk faced by women. It is important to remember that sexual harassment occurs in an environment already overcharged by a sense of violence and insecurity generated by major road safety issues and high levels of delinquency, which have in turn generated strong perceptions regarding social insecurity.

Throughout our study and in every activity, women, particularly older women or those who habitually accompanying vulnerable children or adults, expressed fears of both delinquency and sexual harassment. While fear of delinquency was common to both men and women, for women this was particularly damaging to their self-esteem and their ability to move freely around the city:

“You can be assaulted any place, in your house, anywhere. One thing is the assault, but I say, they can rape me, they can hit me, and if there are two, or three — this is the fear that all women have, that this could happen to us. For us women, this adds to the fear that men have, makes it greater.”

Focus group participant, Ñuñoa, who had been pursued by three men in a car

“You live with this story all the time, you’re scared of walking, scared of any man you see. You think, maybe they will abuse or rape me. That is the biggest fear, way beyond having my cell phone stolen. That really does not matter to me.”

Focus group participant, Santiago Centro

Data from other studies in Santiago is consistent with this finding. OCAC, a citizen’s observatory supported by UN Women, which has been following harassment in public space through several surveys, reports similar levels for public space (they do not consider public transport specifically) and note that this kind of violence is unidirectional: the attacker has no interest in the person attacked.

“Because it can occur many times in a single day, it generates a negative psychological impact that accumulates over time (OCAC, 2014). Moreover, focus group responses indicated that people do not

differentiate among the risks they face. Rather, they bundle them together into a single set of fears—delinquency, gender-related violence, and also the violence of driving and traffic on city streets: When you talked about insecurity, and insecurity, in my case, and people my age, there is a great insecurity in the buses for another reason, jamming on the brakes, squealing around sharp curves, people can be injured. In fact, people are injured, often, by this kind of driving.”

Focus group participant, Ñuñoa

IMPLICATIONS FOR SUSTAINABLE TRANSPORT

Despite these fears, reported above, the survey revealed that men were unlikely to make significant changes to their travel, whereas most women reported that they responded to fears for their safety by eliminating trips, changing routes, times or travel mode. One of the most surprising responses that we detected was reported by women in the El Bosque focus group. Despite their extremely low incomes, they often avoided public transport and preferred expensive radio-taxis for their travel. To do so, they became extremely sophisticated managers of time and logistics, combining several trips to get the most out of the taxi fare: depending on the destination, 5-10 times or more the price of bus fare.

Survey results tended to support this view that despite being considered “captive” users (as transport engineers call a category of users considered to have few or no alternatives to public transport), some of the most vulnerable sectors of the population are abandoning public transport, and more are eager to do so, the moment they get the chance.

As has been widely noted in diverse contexts, women’s behaviour influences whole families, indeed communities, and is therefore particularly strategic to projects for social change. One disturbing implication from the focus group results was the general agreement among participants that they avoided public transport whenever possible and shared this prevision with their children, particularly their daughters. This suggests — as occurs with other kinds of social fear and trauma — that impacts are transmitted from one generation to the next.

Survey results supported the focus group comments (table 1): half of the women respondents reported they habitually changed the time or day of travel to feel safer and avoid risks. As mentioned, this led to personal, often unconscious, curfews, sometimes as early as 7pm, that severely limited women's participation in diverse activities. The survey detected that this was also driving aspirations to shift away from sustainable transport modes altogether, in favour of the private car, widely viewed as safer, more comfortable, and more convenient.

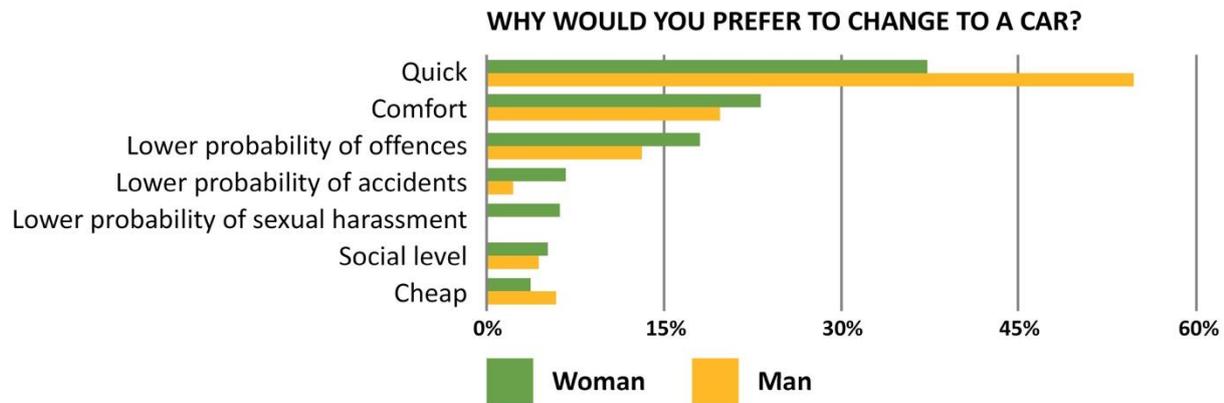
While most men (63%) and women (70%) indicated they would change modes if they could (table 2), preferably to the car, this preference for the car was higher among women. Men, moreover, viewed the bicycle, another healthy and sustainable transport option, as a viable second choice (16% men versus 12% women), whereas women preferred another motorized vehicle, the collective taxi (20%).

Table 2: Would you prefer another mode of transportation?				
	Men (63% would prefer to change)		Women (70% would prefer to change)	
1°	Car	26%	Car	33%
2°	Bicycle	16%	Collective Taxi	20%
3°	Collective Taxi	11%	Bicycle	12%
	Others	10%	Others	5%

Source: ESMS-Santiago survey data.

The main reason provided by both men and women was that the car was faster, followed by comfort, but for women, the third important option was that they felt they would be safer from crime. Only women (5%) mentioned "the lowest probability of suffering sexual harassment" specifically as a motive for change. Nonetheless, their responses in both the survey and the focus groups suggest this is clearly part of their considerations.

Figure 8. Reasons for changing travel mode in favour of the car for women and men.



Source: ESMS-Santiago survey data.

This is also suggested by the responses only of those preferring to switch to the car (figure 8). Overall, respondents reported they would switch to cars for speed (44%) and comfort (22%). For women respondents, however, although speed was still their first priority (37%), the second most important reason (31%) was safety (from collisions, crime, harassment), followed by convenience (23%). Most men (55%) would also switch to driving, for reasons of speed, followed by convenience (20%) and, a close third (19%), safety and security.

	1977	1991	1997	1999	2012*
Cars	11.6	20.8	24.2	37.4	25%
Buses	80.1	63.6	61.0	55.0	26%
Metro	3.3	6.4	7.1	8	

* Figures for 2012 are calculated over the base of all modes of transport (adding up to 50% of total trips), whereas the previous figures are calculated for cars, buses, Metro only (adding up to 100%, in addition to other trips, which were not as well studied in previous Origin-Destination surveys). Sources: 1977-1999, Azocar, published on the World Bank website, accessed 3-III-2018; 2012 Origin-Destination survey.

In the past two decades, public transport’s modal share has plunged in Santiago, while car use has soared, reflecting massive investments in highways and roads for cars (table 3).

These results raise the disturbing probability that a significant mechanism driving this change could be women’s rejection of public transport for safety, security, comfort and other reasons. Moreover, the effects of this mechanism may be multiplied exponentially by women teaching their children, both boys and girls, but with special emphasis on girls who, in turn, convey this social learning to their own children and others they care for.

6. GOOD PRACTICES AND TOOLS FOR CHANGE

Despite significant achievements in women's participation generally and in addressing gender-related violence specifically, Chile lags behind other cities in responding suitably to sexual harassment on public transport. This is because, with some notable exceptions (Segovia & Dascal 2000) efforts on gender violence issues in Chile have focused primarily on domestic sites of violence, with public space an issue becoming an increasingly important issue in the past three years. Our field visits to the three participating cities confirmed this perception, with Quito standing out for pioneering innovations focused specifically on public transport.

Nonetheless, Santiago has proven able to tackle some difficult issues with private bus operators and other systemic factors that provide creative examples of responses. Moreover, the impact of the ESMS Santiago study and work by other researchers, related to our Lab (Sagaris & Tiznado Aitken, and others, 2017, 2018), and to other university centres, have driven significant awareness and promising shifts in public policy objectives.

As we write, the outgoing public transport minister (a woman, Paola Tapia) was announcing a new gender-based strategy for transport (3 March 2018), while the number of women bus drivers was on the rise, due to changes in bus operators' hiring procedures, and new strategies and financial resources provided by the national Ministry for Women and Gender Equity.

6.1 EXAMPLES OF GOOD PRACTICES

METRO-OCAC JOINT CITIZEN-AGENCY CAMPAIGN

In 2017, Santiago's Metro developed a poster campaign with a citizens' organization, the Observatory against harassment of women in public spaces (OCAC). This underlined that "Harassment is violence" (#Acoso es violencia). Two men's civil society groups, EME Masculinidades and MenEngage Alliance cooperated with a complementary campaign: Aren't you ashamed? (#no te da vergüenza). The effectiveness of these campaigns, especially where there is no related legislation or suitable response protocols, requires evaluation to determine their effectiveness.

NEW, GENDER- AND TRANSPORT-SENSITIVE PLANNING APPROACH

The women's safety audit and participatory mapping activity, reported earlier, under results, has led to an ongoing collaboration between the Lab, the Women's Centre and the local government of El Bosque to develop a "Cool Routes" program for school children and for women to better access public transport improvements (better bus stops and new Metro stations to be opened in coming years).

GETTING LOCAL COMMUNITIES INVOLVED

As described above, a participatory workshop and public transport-women's security audit was carried out in cooperation with the El Bosque Women's Centre, in a low-income neighbourhood that formed part of the general study in Santiago. To do so, we adapted the women's safety audits first developed by women's groups in Toronto and more recently recommended by UN Habitat for use in cities around the world. This proved a powerful tool for mobilizing community-government authorities-transport agencies and police to consider women's needs and how to integrate them more fully in transport sector planning and operations.

Some 30 participants (male and female) audited a preplanned route and then participated in a workshop where specific features of the public transport system were discussed and solutions co-developed. This type of audit allows the social, physical and functional aspects of a specific environment to be assessed and helps to identify how the physical characteristics of a neighbourhood change at times of day and on days of the week (some bus stops for example are safe in daylight but not after dusk).

An added benefit were the discussions among players who had not met previously to discuss these issues, thus integrating diverse perspectives into a single analysis. The groups met at the Women's Center, and researchers, local women, representatives of Carabineros (national police force), the ESMS research teams from all three cities, the research manager from a local bus operator as well as other interested parties took part. This proved useful to address security and harassment issues and build dialogue among local/regional authorities, organized citizens and others to find common solutions based on the resources of all those present.

“CYCLE-INCLUSION” TO IMPROVE HOME-BUS-DESTINATION SAFETY

Santiago has enjoyed considerable success with a focus on ‘cycle inclusion’ that has been developed during three years of training and collaborative policy implementation by citizen organizations (Living City, Bicicultura, Macleta, CicloRecreovia), local (Recoleta, Maipu, Providencia) and regional governments and some private players (Bicicletas Oxford).

Figure 9. A participant during the Women’s Safety Audit and Participatory Mapping session, in El Bosque, reports on group work mapping points of conflict and safety in her sector of the comuna.



This led to a substantial increase in the cycle paths, cycle lanes, traffic calming and other facilities available (from 50 km in 2006 to almost 200 km in 2012), doubled cycling's modal share, and increased women's participation from under 10% of cyclists to around 30% (Sagaris, 2015; Sagaris & Olivo, 2010).

Aside from private cyclists, bike share has become very popular, with significant use among women and a strong integration with public transport exchanges, particularly Metro stations. As part of a citizen-bus operator initiative, the government has been evaluating Bikes on buses, using racks that are common on bus systems throughout North America, and there is an incipient circuit of free cycle-taxis in the city center.

Research by the PUC Centre for Sustainable Urban Development (CEDEUS, Chile) and the Laboratory for Social Change suggests that, in conjunction with other security-oriented measures, effective bike-bus-Metro integration could help to improve women's safety by reducing or eliminating wait times at isolated bus stops at night, as occurs when women and girls can ride their own bikes rather than having to walk through less secure areas (Sagaris, Tiznado-Aitken, & Steiniger, 2017). Similarly, cycle-taxis operated by women and men could provide important services that reduce the isolation, the risk and the burden of carrying children or packages to and from public transport.

A Women's Cycling School, developed by Living City and Macleta, the women's cycling group, has proven highly successful in getting women onto bikes and helping to address empowerment, safety, security and other issues through this initiative. This provides opportunities for women to cycle together and gain confidence by cycling with others so that they can then cycle alone.

GETTING MORE WOMEN WORKING: ACTION FOR TRANSPORT EQUALITY IN SANTIAGO

While working on this study, one Santiago researcher experienced harassment on the Metro. When she reported it to the security guard, he questioned her for not stopping the man involved and delivering him to the guard! This response does not appear to be exceptional, indicating the need for special gender-awareness, protocols and training, even when security systems exist.

Women constitute a small percentage of the transport workforce, although where women participate, as bus drivers for example, feedback from Bogotá, Buenos Aires and Santiago suggests they perform well and can be outstanding. In 2017, Santiago's women's ministry was working with DTPM, the public transport agency, to develop a program that combined childcare, after school care, accelerated training and other components to help women become eligible to work as bus drivers. This can be complex for operators too, where they do not have suitable change room and other facilities.

Faced with prejudices and the fact that several private operators refused to hire women bus drivers, Transantiago developed awards for the Best Male and Best Female Bus Driver to highlight positive aspects of the system and encourage more hiring of women. Within a year, all bus companies had a small, but growing contingent of women bus drivers, so that they could compete for the award, which is important for their rather low public image. This became an opportunity to highlight women's role and contributions to the quality of public transport before the general public. This award also provides an opportunity for the public to see that women can succeed as bus drivers, and rewards those working well.

These initiatives remain very limited, however, to the extent that there is no legal system capable of outlawing, prosecuting and punishing those responsible for acts of harassment. Hence the need for institutional improvements.

6.2 KEY INSTITUTIONAL CHANGES

As the conceptual framework summarized at the start of this report reveals, sexual harassment and violence associated with travel on public transport is a complex bundle of situations, values, behavioural, public policy and other responses. It is the result of deep-rooted social values and new challenges, as women seek to play more prominent roles in society. These changing conditions, typical of our times, make it essential to think strategically about what could be the optimal combination of

methods, policies, programs, projects and general measures to improve security, isolate and punish those responsible for the harassment, according to their degree of violence.

An essential step, still sorely lack in Chile, is the creation of a legal framework that reinforces a new assessment of this issue, identifying harassment in public transport as a crime, and establishing the appropriate punishments for each type and degree detected. On 17 March 2015, OCAC, the civil society organization working on this issue in public space, with support from UN Women, proposed to congress a draft law to recognize street sexual harassment as a type of violence.

The new law would seek to eradicate sexual harassment on the street, defined as sexually suggestive behaviour in public spaces or those typically accessed by the public directed at an unwilling recipient. It also condemns behaviour that undermines people's dignity and /or their fundamental rights. The draft law mentions three specific behaviours, punishable by fines ranging from approximately USD\$75 to \$1500. The behaviours covered are:

1. on-street sexual harassment consisting of non-verbal and verbal acts. The fine may be omitted in the event the harasser makes a public apology to the object of the harassment.
2. on-street sexual harassment consisting of capturing images, videos or any audio-visual register of someone's body without their knowledge or informed consent.
3. on-street sexual harassment consisting of acts such as intimidating approaches, exhibitionism or masturbation, persecution on foot or by vehicle.

Unwanted physical contact of a sexual nature would be subject to minor prison sentences, which may be increased depending on the seriousness of the occurrence. Despite the efforts of various organizations and broad support from citizens' organizations, the 2014-2018 congress did not pass the law and its future is uncertain, given the new government which assumed power in March 2018.

6.3 OTHER MEASURES

As the evidence presented, the discussion and the practical tools described elsewhere in this report indicate, if countries wish to have healthy cities and viable, clean, efficient and inclusive transport systems, the needs of women and other vulnerable groups must be central to transport planning. To date, however, women's particular needs are often treated as an expensive or unnecessary extra, leading to the results reported here and, potentially, the decline in support for and use of public transport, with serious implications for the future sustainability of cities.

MAINSTREAMING GENDER IN LAND USE, PLANNING AND OPERATIONS

Mainstreaming gender in all aspects of transport and land use planning is therefore essential, at every scale, from national transport ministries, which regulate and fund key transport projects, down through regional and local governments, with the advantages that arise from their proximity to people and communities. We mention land use because of the importance of coordination the location of day care, shops and work, to simplify parent's travel through the city. One successful approach was the inclusion of these services in some of the bus terminals in Bogotá. This kind of measure has yet to be applied in Santiago, however.

Experiences from Santiago and the other cities involved in this study reveal the importance of innovation, political vision and commitment from elected leaders, technical staff, citizen organizations and private operators. In Latin America, one of our partner cities, Quito, stands out as a major source of innovation and inspiration. With UN Women, the city authorities and other groups have been working

for several years to improve reporting of harassment, punishing it with prison sentences and other legal measures, and implementing an alarm and instant assistance program on buses themselves.

Similar programs are sorely needed in every city and regional transport agency. Our research also underlined the importance of generating basic protocols describing how guards, police, other passengers, frontline transport employees, women's and other citizen organizations should get involved and respond to specific situations of harassment, as well as generating the kinds of communicational and action campaigns that influence deeply held values that make women targets for sexual predation and violation. Laws, protocols, other measures require a concerted effort to train these diverse actors, so they respond more effectively at the individual level, but also so they mobilize collectively to treat the objects of harassment in ways that preserve their dignity and self-worth, at the same time as providing support, legal and other kinds of assistance.

GETTING MORE OUT OF DATA: IMPROVING COLLECTION AND ANALYSIS

As we developed the ESMS study, researchers on our team were also looking at what could be done with Santiago's origin-destination data, which is quite extensive. Travel figures are broken down by sex, but seldom analyzed to extract gender-relevant information. A parallel study by the Lab, conducted in conjunction with ESMS, has developed a relatively simple methodology for analyzing women's travel patterns, limitations and potential needs (Sagaris & Tiznado-Aitken, 2018). This method could be further refined, systematized and perhaps even turned into a simple software that other transport agencies and planners could apply to their own data. It also helps to highlight the kind of information that may be available but seldom used, or simply lacking, requiring improvements to survey designs and other methods.

DEVELOPING NEW PRACTICES IN THE LIVING LABORATORIES OF REAL CITIES

Because the gender gap study by Comunidad Mujer gives insight into how the gap changes throughout the life cycle, from young children to older adults, another parallel study by the Lab explored how **Cool Routes to School** programs could potentially address gender and violence issues at the primary school level. It used a hands-on method, including learning bicycle mechanics, to empower girls and retrain boys about women's skills, abilities and roles in general. Through visits to key sites, such as the open-air transport museum and the Transantiago Operations Centre, children learned about transport, sustainability, and social equity.

Similarly, speakers, both men and particularly women, showed children how women's roles are already changing, opening their eyes to new possibilities for their own futures. These kinds of programs, which begin just at the point in the lifecycle where gender differentiation is starting to appear, can deliver a wealth of new ideas, values, skills and expanded capacities to children. The Lab is currently developing an equivalent program for high school students, that will look at how working on practical transport challenges and thinking about sustainability with social equity, could bring more girls, low-income students and others into the Science, Engineering, Technical and Mathematical programs so often dominated by men, at the university level.

FUTURE COLLABORATIONS AND RESEARCH

International cooperation, the kind of mixed methods and interdisciplinary, multi-sector approach applied in this study should form the basis of future collaborations. Results to date from the ESMS seminars and interactions among research teams, but also with public policy, citizen organizations and private bodies such as operators, clearly point to the importance of getting key players from all three sectors involved, simultaneously.

Future research should start from the expertise to be found in the study of the law, criminology and related disciplines to better understand perpetrators. Today, there is a tendency to act as if “all men are potential perpetrators”, but in fact, there are some indications that most acts of sexual harassment on public transport may in fact be perpetrated by only a small number of aggressors. In an environment marked by indifference and impunity, these seem able to carry out even the most heinous crimes, such as the kidnapping and rape of girls and women travelling on Santiago’s supposedly safe Metro, for example, as occurred while we were conducting this study.

Developing and testing not only protocols, but the training programs necessary to sustain them, is a necessary step if cities are to effectively address the challenges raised in this Santiago and the other ESMS studies. This should start with an evaluative study of the Quito programs, which seem to have turned police and other key players in urban safety into well informed defenders of women’s and other transport users’ rights. Based on these results and the lessons we can learn from Quito, test programs should be developed in Santiago, Buenos Aires and other cities, for evaluation, recommendations on how programs should be adapted to local values and institutions and final development as regular parts of public transport agency operations.

7 FINAL REFLECTIONS

As cited in this set of ESMS studies, research by CAF and university, government and global institutions has documented how important women’s full participation is to, for example, economic results and the full functioning of modern societies and cities. Transport is a crucial link between any policy, program, or project and the people it is intended to serve.

International funding often contemplates resources for infrastructure, consultants and other purposes, but it seldom considers the importance of bringing in specific expertise relating to issues such as gender, particularly through a citizen lens. Citizens are important because as a group they are far more diverse than the typical professional planning community. Moreover, this diversity provides citizen organizations with information about new trends and old needs that have been neglected and can bring significant conflict if not adequately addressed. Global agencies, development banks and the funds being created to address global climate and other changes, must consider people — and not things — as the object and the subjects of their efforts. This requires funding for civil society involvement, innovative studies and experiments in the living laboratories of real cities.

Increasingly, if humanity is to survive the challenges of the 21st century, strategies such as the gender mainstreaming, good practices, innovative study methods and other elements discussed in this study must become an essential component of regular practice. One of the great benefits of the ESMS research project to date included being able to work from the strengths of several research teams, with similar goals but very diverse backgrounds training, and methods.

For the Lab’s work, with diverse university, citizen and governmental partners, the chance to study and apply new knowledge about gender and transport has already found expression in participatory planning initiatives in Santiago, Temuco and other Chilean cities.

For Transport Engineering, at PUC, it has been a valuable experiment as we struggle to get the most out of synergies between engineering and social sciences methods and knowledge. Combining surveys, a traditional engineering technique, with focus groups and participatory workshops, proved something of a revelation in an academic world where getting people from different disciplines to really interact — or even understand each other! — can be quite a challenge.

In 2017-2018, with experience from the ESMS Santiago study and other “living laboratory” studies as relevant inputs, the Lab, Living City, and its university partners, the Centre for Sustainable Urban Development (CEDEUS) and the BRT+ Centre of Excellence at PUC, began development of a Transport Justice Report. The lessons and experiences from the ESMS-Santiago study — for citizen advocacy, government planning and private sector partnerships — is far-ranging and highly relevant to achieving sustainable transport with equity. This is central to many of the global goals highlighted at Habitat 2017, in Quito, which is where our study began.

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