

**Beyond Access:  
Gender and Transport Justice in Davao City, Philippines**

Roselle Leah Kolipano Rivera



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**Beyond Access:  
Gender and Transport Justice  
in Davao City, Philippines**

**Meer dan alleen toegang:  
Rechtvaardigheid op het gebied van gender  
en vervoer in Davao City, de Filipijnen**

**Thesis**

to obtain the degree of Doctor from the  
Erasmus University Rotterdam  
by command of the  
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by

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*in loving memory*  
*of Maureen Pagaduan and Laura Samson*





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## Acronyms

ADB	Asian Development Bank
ASEAN	Association of Southeast Asian Nations
CDP	Comprehensive Development Plan
CEDAW	Convention on the Elimination of All Forms of Discrimination against Women
DOH	Department of Health
DOTr	Department of Transportation
DPWH	Department of Public Works and Highways
FGD	Focus Group Discussion
GNI	Gross National Income
HCDC	Holy Cross of Davao College
ICD-11	International Classification of Diseases 11th Revision
IMT	Intermediate Means of Transport
LGU	Local Government Unit
LMICs	Low-Medium Income Countries
MDG	Millennium Development Goals
MMARAS	Metro Manila Accident Reporting and Analysis System
NEDA	National Economic Development Authority
OECD	Organization for Economic Cooperation and Development
ONEISS	Online National Electronic Injury Surveillance System
PMV	Private Motor Vehicle
PUJ	Public Utility Jeepney
RSS	Random Sample Survey
SDG	Sustainable Development Goals
SIDA	Swedish International Development Agency
TMC	Traffic Management Center
TMCB	Traffic Management and Control Board



*Acronyms*

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TRRL	Transport and Road Research Laboratory
VRU	Vulnerable Road User
WHO	World Health Organization



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*The Hague, The Netherlands*



## Abstract

Transportation is more than just a technological concern; what is central are people's aspirations which are also intertwined with a country's development goals. When transport is grounded on people's experiences, it becomes more nuanced and responsive to their needs. This in turn has implications on how the idea of transport and development is envisioned and implemented, that is, not primarily considering "First World" technocratic standards but rather one which is contextualized in the user's realities – their geo-political location, resources, capabilities, and their way of life.

Feminist contributions to urban transport studies belong to broader debates on the place of transport in enhancing human capabilities and social rights (Fainstein, 2010; Nussbaum, 2005). Other work in critical urban studies focuses on the relationship between social identities (gender, class, age, race, or a confluence of these), and safety in urban contexts. 'Urban transport' in the 'development' debate reveals that while development studies have freed itself from a technocratic model based on notions of efficiency, urban transport studies are only starting to embrace the right-based perspective and a consultative model of planning.

This study brings together these emerging perspectives in urban transport studies in an attempt to integrate them under the concept of transport justice – to be treated as part of a broader struggle for environmental justice (Schlosberg, 2013; Schweitzer & Valenzuela, 2004), civil rights (Soja, 2010; Harvey, 2003) and inclusive cities (Roy, 2010). The study's framework on transport justice, intersecting with gender justice, builds on three concepts: redistribution, recognition, and representation. The research was designed as a multilayer exploration which covers the different levels of interplay between notions of "gender" and "transport" to elucidate the marginalization of the interests of low-income users, the majority being women traders and workers. Placed in a context of "devel-

opment”, i.e., intra-city land transport in Davao City, Mindanao, The Philippines, “transport justice” is applied as a normative framework to bring to light three clusters of gender issues.

Transport justice, as expounded in this study, highlights (1) the concrete reality of unequal distribution of transport resources, such as safe modes of transportation, public infrastructure, as well as real options for transport which considers factors such as the users’ financial and cultural context; (2) the inequality of representation, if not invisibility, of certain transport users, in the discourse of transportation, which is often tied to the other forms of discrimination that these groups face; and (3) the cultural and structural barriers to recognize the needs of these groups and therefore the importance to engage these groups. Transport justice, at its core, is about inclusivity in development. Transport justice seeks to integrate the various experiences of users so that transport modes, infrastructure and systems are responsive to their needs at the personal level and to addressing the gaps in transport planning and implementation at the macro level.

Recognizing methodological pluralism as an important value in interdisciplinary research, the study uses a combination of methods, each of which has a distinctive role. The survey method was used to capture and quantify similarities and differences among 360 male and female transport users from 12 different workplaces in 3 districts of the city, comprising mostly women traders and workers. Focus-group discussions with transport users, field observations and one-to-one in-depth interviews with a subsample of 8 female users were conducted to gain deeper insights on meanings of “safety” and “security” from the perspectives of the users. Textual analyses were used to look into issues of misrepresentation as well as invisibility that are crucial in a transport justice frame. In light of the view of social policy on safety and security of the body, a close review of road safety data was done through looking into the standards of assessment of the causes cited in various texts.

The findings suggest that inequality of access shapes the choice and agency of transport users, which, in turn, contribute to the shaping of intra-city transport systems. A relevant set of questions that has emerged from the findings scrutinize who is harmed by crashes, how conflicts between users of motorized and non-motorized transport are socially distributed, and what are the main mechanisms and consequences from the

perspective of transport justice. The questions raised significant discourses on (1) differentiated access to safe transport for men and women; b) how thinking on gender underpins the perceptions, definition of transport needs and infrastructure planning, especially how the interplay between dominant notions of “gender” and “transport” can marginalize the interests of low income users, by way of planning of transport infrastructure, facilities and services; c) gender dynamics within processes of participation of citizens’ groups in policy-making.

There are no official data in the transport policy documents of Davao City on the type of people harmed by conflicts of user roles. Police records of crashes were not woven in planning decisions of the short, medium and long-range transport documents studied. Nevertheless, information culled from the medical records and emergency logbooks of one centrally located hospital may instigate more systematic research in the future to stress the urgent need of transport safety in the lives of people in the city.

The concept of transport justice in feminist research agendas helps carry ‘gender’ as an analytical concept and a set of policy concerns to the center stage. Beyond the level of resource allocation to achieve gender parity of access, transport justice also helps to address different levels of representation and participation in transport planning to build inclusive cities.

**Keywords:** transport justice, gender, gender analysis, multimodal transport, women and transport, inclusive cities, methodological pluralism



## Samenvatting

Bij vervoer gaat het om meer dan alleen technologie; het gaat om wat mensen willen, wat ook verweven is met de ontwikkelingsdoelstellingen van een land. Wanneer vervoer gebaseerd is op de ervaringen van mensen wordt het fijnmaziger en beter afgestemd op hun behoeften. Dit heeft weer gevolgen voor de manier waarop vervoer en ontwikkeling wordt opgevat en verwezenlijkt; door niet in de eerste plaats uit te gaan van de technocratische normen van de ‘eerste wereld’, maar rekening te houden met de dagelijkse realiteit van de gebruikers: hun geopolitieke locatie, hulpbronnen, mogelijkheden en levensstijl.

Feministische bijdragen aan onderzoek naar stedelijk vervoer maken deel uit van bredere debatten over de rol van vervoer bij het versterken van menselijke mogelijkheden en sociale rechten (Fainstein, 2010; Nussbaum, 2005). Ander onderzoek binnen de kritische stadsstudies gaat over de relatie tussen sociale identiteit (gender, sociale klasse, leeftijd, ras, of een mengeling daarvan) en veiligheid in een stedelijke context. Bezien vanuit ontwikkelingsperspectief blijkt dat in ontwikkelingsonderzoek een technocratisch model gebaseerd op begrippen van doelmatigheid is verlaten, terwijl in onderzoek op het gebied van stedelijk vervoer nu pas het op rechten gebaseerde perspectief en op overleg gebaseerde planningsmodel begint door te dringen.

In dit onderzoek worden deze nieuwe perspectieven op het gebied van stedelijk vervoer bijeengebracht in een poging ze op te nemen in het begrip vervoersrechtvaardigheid – onderdeel van een algemenere strijd voor milieurechtvaardigheid (Schlosberg, 2013; Schweitzer & Valenzuela, 2004), burgerrechten (Soja, 2010; Harvey, 2003) en inclusieve steden (Roy, 2010). Dit onderzoek over vervoersrechtvaardigheid en de raakvlakken met genderrechtvaardigheid is gebaseerd op drie begrippen: herverdeling, erkenning en vertegenwoordiging. Het onderzoek is opgezet als een gelaagde verkenning van het samenspel tussen de begrippen ‘gender’ en ‘vervoer’ op verschillende niveaus, om daarmee licht te werpen op de marginalisering van de belangen van gebruikers met een laag inkomen



(voornamelijk vrouwelijke handelaars en arbeiders). ‘Vervoersrechtvaardigheid’ wordt in een ‘ontwikkelings’context geplaatst en toegepast als een normatief kader om drie clusters van genderkwesties te belichten. Het onderzoek is gericht op binnenstedelijk vervoer over land in Davao City op het eiland Mindanao in de Filipijnen.

De volgende aspecten van vervoersrechtvaardigheid worden in dit onderzoek belicht: (1) de realiteit van een ongelijke verdeling van zaken die met vervoer te maken hebben, zoals veilige soorten vervoer, openbare infrastructuur, en reële opties voor vervoer waarbij rekening wordt gehouden met factoren als de financiële en culturele context van de gebruikers; (2) de ongelijke vertegenwoordiging, zo niet onzichtbaarheid, van bepaalde vervoersgebruikers in het discours over vervoer, die vaak samenhangt met de andere vormen van discriminatie waarmee deze groepen worden geconfronteerd; en (3) de culturele en structurele belemmeringen voor de erkenning van de behoeften van deze groepen en daarmee het belang om deze groepen erbij te betrekken. Vervoersrechtvaardigheid gaat in de kern over inclusiviteit in ontwikkeling. Vervoersrechtvaardigheid is erop gericht de verschillende ervaringen van gebruikers te integreren, zodat vervoerswijzen, -infrastructuur en -systemen beantwoorden aan hun persoonlijke behoeften en voorzien in de lacunes in de vervoersplanning en -uitvoering op macroniveau.

Vanuit de gedachte dat methodologisch pluralisme een belangrijke waarde is in interdisciplinair onderzoek, wordt in dit onderzoek een combinatie van methoden gebruikt. Daarbij heeft elke methode een eigen rol. Met behulp van vragenlijsten zijn overeenkomsten en verschillen tussen 360 mannelijke en vrouwelijke vervoersgebruikers vastgesteld en gekwantificeerd. Het betrof vooral vrouwelijke handelaren en werknemers die werkten op 12 verschillende plaatsen in 3 stadsdelen. Er zijn focus-groepdiscussies met vervoersgebruikers en aparte diepte-interviews onder een deelsteekproef van 8 vrouwelijke gebruikers gehouden en veldobservaties gedaan om beter te begrijpen wat ‘veiligheid’ en ‘beveiliging’ betekenen voor de gebruikers. Met behulp van tekstuele analyse is onderzoek gedaan naar ondervertegenwoordiging en onzichtbaarheid omdat deze kwesties een belangrijke rol spelen bij vervoersrechtvaardigheid. In het licht van de beleidsvisie op veiligheid en bescherming van het lichaam zijn de verkeersveiligheidscijfers nauwkeurig bekeken aan de hand van de normen voor de beoordeling van de oorzaken die in verschillende teksten worden genoemd.

De resultaten wijzen erop dat ongelijke toegang bepalend is voor de keuze en het gedrag van de vervoersgebruikers. Dit draagt op zijn beurt weer bij aan de vormgeving van vervoerssystemen binnen de stad. De onderzoeksresultaten roepen de vraag op wie schade ondervindt van ongevallen, hoe conflicten tussen gebruikers van gemotoriseerd en ongemotoriseerd vervoer sociaal verdeeld zijn, en wat de belangrijkste mechanismen en gevolgen zijn vanuit het oogpunt van vervoersrechtvaardigheid. Deze vragen geven aanleiding tot debat over a) ongelijke toegang tot veilig vervoer voor mannen en vrouwen; b) hoe het denken in termen van gender ten grondslag ligt aan de visie op en definitie van vervoersbehoeften en de planning van infrastructuur, en vooral hoe de wisselwerking tussen dominante opvattingen over ‘gender’ en ‘vervoer’ de belangen van gebruikers met een laag inkomen kan marginaliseren in de planning van de vervoersinfrastructuur, -voorzieningen en -diensten; c) genderdynamiek binnen processen van burgerparticipatie in de beleidsvorming.

De vervoersbeleidsdocumenten van Davao City bevatten geen officiële gegevens over het soort mensen dat schade ondervindt van conflicten tussen gebruikersrollen. Politierapporten van ongevallen zijn niet verwerkt in de planningsbesluiten in de onderzochte documenten over vervoer over korte, middellange en lange afstand. Niettemin kan informatie uit de medische dossiers en registers van de afdeling spoedeisende hulp van een centraal gelegen ziekenhuis in de toekomst de aanzet vormen tot meer systematisch onderzoek om de dringende noodzaak van vervoersveiligheid voor mensen in de stad te benadrukken.

Het begrip ‘vervoersrechtvaardigheid’ op de feministische onderzoek-agenda draagt eraan bij dat ‘gender’ als analytisch concept en als beleidsdoelstelling in het centrum van de belangstelling komt te staan. Vervoersrechtvaardigheid is niet alleen van belang bij de toewijzing van middelen voor gelijke toegang ongeacht gender, maar helpt ook om ongelijke vertegenwoordiging en deelname aan vervoersplanning aan te pakken om inclusieve steden te bouwen.

**Trefwoorden:** vervoersrechtvaardigheid, gender, genderonderzoek, multimodaal vervoer, vrouwen en vervoer, inclusieve steden, methodologisch pluralisme

# 1

## Introduction

### 1.1 Introduction<sup>1</sup>

This study deals with the links between culture, gender, and transport policy. Taking off from the debate on “transportation justice” within the discourses on “development”, the study explores the transport conditions in Davao City, the Philippines. It demonstrates how class and gender biases embedded in policy tools and processes (design and implementation) carry important access implications for transport users in terms of affordability, accessibility, and safety. Given that transport options have an impact on people’s opportunities to work, health, education, and facilities for social, political, and cultural activities, a key proposition of the thesis is that the concept of “transport justice” is helpful in redressing these biases, and their impact on the quality of life and the life chances of women belonging to low-income groups. By placing transport users as actors within a range of contextually defined choices, the thesis seeks to bring to light how the technocratic approach to transport planning has been rightfully challenged by feminist scholars for having ignored the multiple levels where meanings are assigned to “gender.” The need for a body of knowledge on transport that is more accountable to users, especially those belonging to low-income groups.

A cornerstone of the debate on the role and impact of transport justice as a concept tries to capture the question of equal access to transportation in a broader struggle for environmental justice (Schlosberg 2013, Schweitzer and Valenzuela 2004), civil rights (Harvey 2003, Soja 2010) and inclusive cities (Roy 2010). In research, a normative framework of transport justice seeks to:

1. Reveal the mode of thinking and institutional mechanisms behind a nation’s transportation planning and delivery systems (Litman

2012, Vasconcellos 2001) to elucidate how and why particular social groups (e.g., low-income and minority communities, especially the women of these communities) often face the brunt of negative impacts of transportation investment in terms of access as well as transport-related burdens such as poor safety and environmental standards;

2. Use the inter-relationship between civil rights and transportation (Bickerstaff et al. 2002, Harvey 2003, Listerborn 2007, Litman 2013, Schweitzer and Valenzuela 2004) as a platform to push the feminist research agenda towards problematizing epistemological issues that underlie systems of research, evaluation, and decision-making in transport policy in ways that produce and perpetuate distinctive patterns of inequity in the domain of transport;
3. Use ‘gender’ as key analytical concept to address a set of policy concerns to show how particular understandings and values of “gender” influence the construction of categories of analysis in transport and spatial planning (Levy 2012), with special attention to the transport user and his/her needs;
4. Advocate for an understanding of transport needs built on specific empirical contexts of intersecting power relations (Levy 2012: 52) to address institutional structures of discrimination and segregation that produce differentiated access to safe transport services in specific places.

Application of the above perspective on transport justice to the case of intra-city land transport in Davao City means that the research is a multi-layer exploration which covers the different levels of interplay between notions of “gender” and “transport”. The aim is to elucidate the marginalization of the interests of low-income users, the majority being women traders and low-income workers, and to show how this is reflected in the planning of transport infrastructure, facilities, and services. By documenting the impacts of poor access to safe and affordable transport on the lives of the users, and how their choice and agency, in turn, contribute to the shaping of the city, the study highlights the dire need for accountability in transport planning in Davao City, and suggests some feasible responses.

Gender differentials in access to urban transport are explored at two levels. Empirically, the study documents the urban transport needs of different groups of men and women users in Davao City. The perspectives

of the users are related to broader considerations such as the relationship between their access, or lack thereof, to transport and their opportunities to work, social and health services, education facilities and political centers. The study then contrasts these findings with the realities of transport planning in Davao City, covering the multiple layers of power and political processes in decision-making and how the concerns of users from low-income groups are consistently placed at the margins, and how gender differentials in preferences, choice and agency are yet to be taken seriously by planners.

By bringing into focus the differentiated experience of users with the city's transportation system in their everyday life, (taking into consideration income as well as physical and social location,) the research reveals how gender is embedded in the different layers of the system, as well as the multiple levels in which gender identity, class and location intersect to produce specific experiences of marginalization. The silence on gender in many layers of planning of transport infrastructure, facilities and services also implies blindness to intersectional experiences. This silence manifests an understanding of transport technology as something immune from values and beliefs, a perspective that cannot be defended in the light of the transport's impacts on the lives of users as well as the shaping of the city.

By exploring the local initiatives to address the outcomes of a socially biased transport system and governmental response to these initiatives, the thesis validates the observation by feminist scholars on the persistence of a masculine perspective on economy and society (Connell 2005a, 2005b, Cornwall, Edstrom and Greig 2011, Elson 1993). As the transport planning profession is male dominated, both in terms of the number of men involved<sup>2</sup> as well as the prism through which "transport" and "planning" are studied, women are more often than not invisible in the arena of infrastructural design as well as decision-making regarding transport. The outcome is a male-biased thinking insensitive and unresponsive to the complexity of gender, which runs through significant decisions on current transportation systems. This can be best observed in the often-implied assumption that women's immobility is not only "natural" but even socially preferred (Jain and Elson 2011). Feminist scholars and activists themselves admit that overcoming male bias is a long, slow process which has not yet been completed anywhere in the world (Elson 1995).

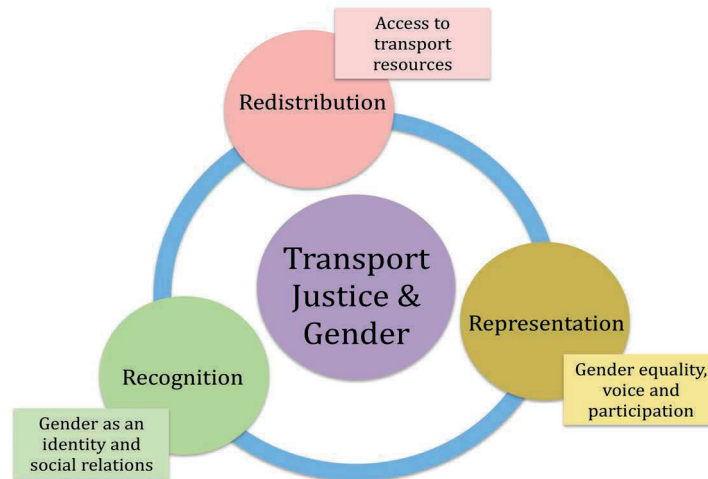
The usefulness of “transport justice” as a concept is to be found in its attempt to tie together the multidisciplinary literature located in transportation studies, urban planning, and the social sciences. The literature on transport justice as a framework raises questions on the social meanings of transport (Jones and Lucas 2012), transportation as a field of policy intervention (Martens 2012: 8), and the principles which should guide the allocation of transportation good (Walzer 1985, 1995 as cited in Martens 2012: 4). Only recently it has begun to tread into the interdisciplinary field of development studies.

Development studies authors (Alkire 2009) reiterate how public policies are normative in that they clarify how groups must behave for improvements to happen. Development is acknowledged to be a multidimensional and multisectoral process and a complex integration of social, economic, and political changes aiming to improve the lives of people. Alkire reiterates that normative frameworks or value judgements lie at the heart of development analysis and policy. Different policies arise from diverse ideas about what should be improved. These value judgements are often not acknowledged. Normatively, this research will involve value judgments as various normatively valuable goals are identified and clarified, describing the clash and negotiations amongst these goals. The research will discuss which goals are valuable and allow the reader to ask questions that favor people at the margins, have practical impact and shape policy making.

In this study, the concept of transport justice will carry the following normative meanings:

1. Redistribution in terms of enhanced individual access to affordable and safe transport as argued by many transport experts (Battellino 2009, Dobbs 2007, Gaffron 2012);
2. Recognition of the link between mobility and “capability enhancement” as articulated in Sen’s writing and extended by others to the field of transport (Bezayit 2011, Creed 2004, Martens 2012); and
3. Representation or participation parity by users and providers to articulate their perceptions on and needs for mobility and safety of transport in urban spatial planning forums and decision-making processes that affect their lives in the cities (Ernste et al. 2012, Soja 2010).

**Figure 1**  
Key Concepts



## 1.2 Placing ‘Urban Transport’ in the ‘Development’ Debate

While development studies has freed itself from a technocratic model based on a certain notion of efficiency, urban transport studies is only beginning to embrace the rights-based perspective and a consultative model of planning. Today in market-oriented societies transport has become basic to human life. Few communities can be said to be able to sustain themselves based on subsistence. While information technology may imply virtual mobility for some people, for those belonging to low-income groups, dependency on transport for actual mobility to make a living remains a crucial concern. When seen from the perspective of equity, access to transport means a certain threshold of affordability and safety which enables people to organize their lives and contribute to economic and social development.

Yet, from a planning perspective, there remains undoubtedly a great deal of misconception regarding transport, the demands of access on time, solutions to ‘transport problems’ both in terms of a combination of mobility, bringing services and facilities closer to people as well as the overall effect of integrating transport into development processes (Edmonds 1998: 2). What is the price to pay for a supposed perfectly functioning



system which should deliver people and goods speedily and efficiently? Indeed, a very unsustainable way of organizing transport in low-income countries is one that denies and limits, rather than enlarges, the access of poor men and women in cities. Transport policies which fail to enlarge access can also be considered as failing to enhance the capability of men and women in poor communities to be mobile and to make meaningful choices to sustain their livelihoods (Kusakabe 2012, Nordbakke 2013, Rakodi and Lloyd-Jones 2002, Salon and Gulyani 2010)

Scholars have identified four societal trends that have important implications on how men and women organize their family life, their views on daily activities and in turn, structure their transport patterns (Plessis-Fraisard and Rosenbloom 2010), and by implication have challenged the fundamentals of classic transport planning.<sup>3</sup> These trends are: 1) globalization, 2) urbanization, 3) motorization and 4) socio-demographic transitions. They all pose an immense challenge to classical thinking on urban transport planning.

Globalization has two components which impact transportation: the movement of manufacturing and some service sector functions from developed to developing<sup>4</sup> countries, and the migration of workers in search of better opportunities (Plessis-Fraisard and Rosenbloom 2010). The opening of fresh opportunities for paid employment for women in low-wage countries implies new travel needs and patterns for them (Leinbach 2000). Migratory movements also import cultural values about women's appropriate transportation behavior to wherever they go (Handy et al. 2008, Tal and Handy 2010 as cited in Plessis-Fraisard and Rosenbloom 2010). Globalization has also intensified urban inequalities, creating a competent class of urban professionals in the central capitals who take charge of various phases of the production, financing, and producer services of the urban economy and who live in the cities alongside recent migrants, urban poor, and the urban proletariat (Cook 2006, Farrington and Clarke 2006, Humphrey 2006). Along with ethnic divisions, the less well-off also contribute to an increasingly diverse socio-cultural mosaic within cities in the Southeast Asian region (Ho 2002).

Urbanization also brings crucial transportation implications. The percentage of urban growth by region for 2005-2020 is 93 per cent in less developed regions as compared to 7 per cent in the developed regions. (UN-Habitat 2008). The United Nations estimates reveal that one out of every two people in the planet is an urban dweller and that urbanization



will be predominantly a developing countries' affair. In 2008, UN Habitat reports that majority of the global population reside in cities and this situation is predicted to be the trend, transitioning from a two-thirds rural population majority in 1950 to a two-thirds urban global majority by 2050. Africa, Asia-Pacific, Latin America, and the Caribbean are sites of approximately 90 per cent of the burgeoning global growth of cities, adding an estimated 70 million new residents to urban areas annually (Safe Cities Index 2017, UN Habitat 2013c: ix). Reports (ADB 2012, UN-Habitat 2013) have emphasized that in Asia alone, the rapidly growing mega, primary, and metropolitan centers as well as middle-sized cities will continue to impose overwhelming realities on the burgeoning population of 1.1 billion people who are expected to be living in these Asian cities in the coming quarter of a century. Some authors see the expansion of urban areas and populations in the next 30 years as "an underlying 'demographic imperative' that drives all policy formation" (UN-Habitat 2016, McGee 2005, Naisbitt 1996 as cited in Dmitriou 2006: 1085).

It is estimated that 80 per cent of the global GDP is accounted for by cities, thus, not surprisingly, urbanization is at the center of development agenda at international to national levels, even local levels. However, the rapid pace of urbanization and the creation of megacities are points for concern. In terms of population, megacities been defined as having more than 10 million inhabitants, while large cities would have 5 to 10 million. The increasing population in urban centers entails an expansion of urban land areas which is not only wasteful in terms of energy consumption in the long run, but places greater stress on the environment through increased pollution and greenhouse gas emissions. Ecological systems would also change. Between 1990 and 2000, a study computed that the expansion of urban lands increased by 28 percent in 120 cities around the globe; by 2030, it estimates that the land area would be triple in size. The same study noted that large and megacities have also doubled in number since 1995, from 22 to 44 large cities, and 14 to 29 megacities in 2015 (UN Habitat, 2016).

Motorization, the growth of the motor vehicle fleet (Zegras 2006, Zegras and Gakenheimer 2006) or the rapidly growing use of motorized vehicles (Plessis-Fraissard and Rosenbloom 2010), is a trend that reflects the strategic choices of states in evolving urban transport problems. Asian cities provide the backdrop for the dramatic increase in motorization levels in the world.

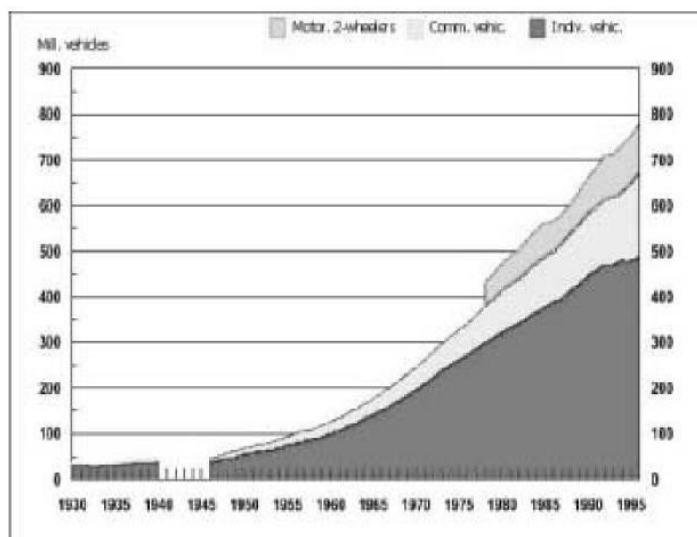
**Table 1**  
*Urban rate of change 1995-2015*

Region/Area	Average annual rate of change of the urban population (entire period)				
	1995-2000	2000-2005	2005-2010	2010-2015	1995-2015
<i>World</i>	2.13%	2.27%	2.20%	2.05%	2.16%
High-income countries	.078%	1.00%	1.00%	0.76%	0.88%
Middle-income countries	2.74%	2.77%	2.61%	2.42%	2.63%
Low-income countries	3.54%	3.70%	3.70%	3.77%	3.68%
Africa	3.25%	3.42%	3.55%	3.55%	3.44%
Asia	2.79%	3.05%	2.79%	2.50%	2.78%
Latin America and the Caribbean	2.19%	1.76%	1.55%	1.45%	1.74%
Europe	0.10%	0.34%	0.34%	0.33%	0.31%
North America	1.63%	1.15%	1.15%	1.04%	1.24%
Oceania	1.43%	1.49%	1.78%	1.44%	1.53%

Source: UN-HABITAT 2016:7

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**Figure 2**  
Motorization worldwide 1930-1995



Source: (Bundesministerium für wirtschaftliche Zusammenarbeit und Entwicklung 2003: 49 as quoted in Abmann and Sieber 2005:720)

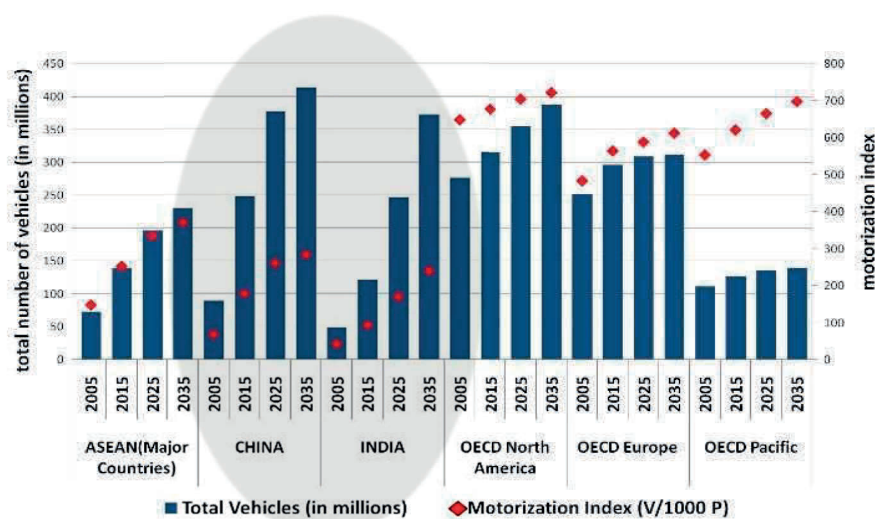
Figure 2 shows worldwide motorization since 1930. In just 15 years between 1980 and 1995, the global fleet of cars, trucks and buses increased by 60 per cent and one-third of the increase occurred in developing countries (Abmann and Sieber 2005: 719).

More than two decades ago, Ingram and Liu (1999) estimated that by 2050, this vehicle fleet would grow by seven times (ibid: 720). Such motorization has evolved to be a comparative “standard,” not only of “progress” worldwide, but as the barometer of significant resource and environmental challenges on the local and global front (Myers and Kent 2004 as cited in Dimitriou 2006). Fabian (2012) used integrated data from various sources, high the alarming rise of the global vehicle fleet as hard evidence that Asia would have half of motor vehicles (Figure 2).

Venter, Mahendra and Hidalgo (2019) maintain that rise in personal incomes have led to low-capacity, inefficient transport modes, and private motor vehicle ownership. The comparison between high birthrates and high motor vehicle registrations provides insights. In Latin America, the ratio of the former to the later is 1:2.5 while in India, it is 1:3. Motorized two-wheelers (motorcycles, mopeds, and scooters) make up large portions

of this mix, accounting for almost half of all vehicles in the Philippines, over 70 percent in India, and an estimated 97 percent in Vietnam. (Venter, Mahendra and Hidalgo 2019:7) The response to increasing motorization across these countries has been expanding road capacity, the construction of pedestrian bridges and parking area subsidy.

**Figure 3**  
*Motorization worldwide with focus on Asia 2005-2035*



Source: ADB, CAI-Asia, Segment Y Ltd and IEA, 2008 in Fabian, 2012:5

The practice of unquestionably accommodating motor vehicle growth is widespread as many Asian governments perceive high rates of motorization as an indicator of economic virility (Dimitriou 2006). Pendyala and Kitamura (2007: 275) expressed alarm over the explosive growth in vehicle ownership and utilization in rapidly developing Asian cities. The health impact is further highlighted by World Health Organization reports that 1.2 million people are killed in road accidents and as many as 50 million are injured worldwide each year (Dora 2007). Approximately one half of all road fatalities and injuries worldwide happen in the Asia-Pacific region (Zegras 2006). Most of these vulnerable road users are reported to be pedestrians comprised of women, children, and the elderly.

The last societal trend which impacts on changing activities on transport behavior are socio-demographic transitions (Plessis-Fraissard and Rosenbloom 2010) during the past half a century, including women taking on paid employment (Leinbach 2000) and the rise of women-headed households<sup>5</sup> (Rosenbloom 2005).

These four societal trends—globalization, urbanization, motorization, and socio-demographic transitions—provide the backdrop for current realities and crucial challenges on women and transport in developing countries which are made worse by policy responses and government programs (Plessis-Fraissard and Rosenbloom 2010). There is a continuing struggle to create a transport system which considers “spaces of vulnerability.” The word spaces in “spaces of vulnerability” here refer to transport spaces which become vulnerable for specific groups of people who cannot afford a secure mode of travel and must opt for existing modes with which they face high risks of injury. Other authors have parallel concept for this interesting concept of “spaces of vulnerability.” Watts and Bohle (1993) coined the concept of “connective infrastructure” for a configuration of factors which may be theoretically mapped with respect to its social, political, economic and structural-historical coordinates. Mobility, via transport infrastructure and services, plays the “connective infrastructure” role of connecting homes and places, which provide not only income for people, but also fulfill their social needs of interaction with other people. Effective transport infrastructure and services link people with economic opportunities and various types of services, activities, and people for their various human needs. According to Knoflacher (2009), the consequences of so called “technical progress” are obvious and transport is one of the most contested development areas which, while offering an endless number of solutions, remain extremely controversial.<sup>6</sup>

### 1.3 Locating Gender in Transport Studies

Knowledge of the transport conditions in many Asian cities, and especially how these interact with other factors, is modest (Gannon and Liu 2000 as cited in Porter 2005: 1). The World Development Report affirms that baseline data is needed as these have far-reaching impacts on poverty, health, and education outcomes (World Bank 2004:212 as cited in Porter 2005: 5). UN Habitat (Williams 2006) brings forward the urgency of tackling transport and poverty with four glaring realities: (1) Families and individuals spend upwards of 30 per cent of their incomes on transport and

energy services; (2) workers commute up to four hours a day (including walking) to low-paying jobs, wasting time and losing productivity; (3) by 2020, transport will kill more than HIV, war and tuberculosis combined, the majority of victims being the poor, women, and children; and (4) upwards of 50 per cent of foreign exchange earnings go to importing fossil fuels for urban transport, bankrupting national treasuries.

Available urban transport research in Asia (Morichi and Acharya 2013) reveals a technocratic empiricism where large-scale surveys use a selected range of indicators to allow cross-country comparisons. Such data surface the allocation and distribution of resources which in turn reveal implications for justice in a variety of dimensions, i.e., social differentials in access, distribution of mortal accidents, and environmental depletion. Although driven by the concern of social equity in development, survey data does not provide sufficient insights on the workings of institutions in urban transport planning and service delivery, especially in developing countries. Furthermore, a perspective on the users is missing especially regarding choices as being shaped by actual constraints.

Transport justice requires a cognitive dimension of fair understanding and hearing the voices of those excluded from the urban transport planning machineries. The role of collective agency in promoting development has been highlighted by the gender perspective, and it is here where gender analysis places gender equity as a core concern (Fukuda-Parr 2003). Feminist scholarship has demonstrated the significance of understanding the histories of social and conceptual exclusion or marginalization of gender in scientific enquiry in different fields, and how patterns of androcentrism in the practice of science are carried through to social practices (Harding 2004, Rouse as cited in Harding 2004). Despite advances feminist scholarship has made in the sciences, transport studies remain by and large unaffected by feminist questions.

More recently, several attempts have been made to apply feminist insights to urban transport studies (Fainstein and Servon 2005). These efforts belong to the broader debates on the place of transport in enhancing human capabilities and social rights. Other attempts took off from critical urban studies and are more concerned with how public transport users, especially women, experience safety and personal security as compared to men. The concern is placed on the relationship between social identities (gender, class, age, race, or as formed by confluence of these), and safety in a given urban landscape.<sup>7</sup> Globalization and dominance of economic

institutions such as the World Bank, other international development banks, and the UN, in defining the contours of gender and mobility discussions, has also been criticized as being gender-blind and based on Western perspectives. Thynell (2016), for instance, highlighted the experience of women in Asian cities such as New Delhi, Mumbai, Jakarta and many others face in relation to their mobility and access to transport: they lack ownership of private motorized vehicles, they often walk or cycle to their destinations, and when they use public transport, these are usually in a poor condition, unsafe and unreliable. The international commitments on improving the transport conditions for women and gender equality in this regard remain rhetorical without grounding on women's experiences on the same. Thynell recommends feminist epistemologies and development research to effectively study the context of Asian transport systems, and the geographical, cultural, and economic factors and social structures influencing it.

Most students of gender and transport are concerned with the behavior of transport users, their access to different means of transport, and economic costs. Sanchez and Gonzales (2016) noted that while men's choice of transport mode is relatively static, women are more likely to consider multi-modal transportation. Women's commuting behavior in relation to their point of destination is influenced by factors such as age, education, owning a driver's license, access to private transport, location, household size and net income. This was also observed in Miralles-Guasch et al. (2016) in their study on gender differences in mobility patterns between men and women, both in urban and rural contexts. A concern in this study was the use of sustainable transport. Sustainable transport in the study was defined by measures on greenhouse gas emissions and energy consumption, vis-à-vis one's travel. The findings show that it is the women, more than men, who are likely to use more sustainable transportation modes, and travel for more diverse reasons. This, for the authors, reflect of women's knowledge and experience with sustainable transport which can be valuable in shaping transport planning towards more sustainable directions. At the structural level, feminist scholars inquire about the gender logic built into transport research and policy choices that create urban transport systems, highlighting how the public and private divide carries different assumptions about men and women's transport needs, and in turn can reinforce hierarchies of access (Levy 2012, McGuckin and Naka-



moto 2005, Rosenbloom 2006, Salon and Gulyani 2010). Gender as a category that organizes thinking and assigning values in decision making on the conception and design of transport, and choice between options available for planners, remains a domain relatively unexplored, with mainstream researches and planning focused largely on economic and, quite recently, environmental impacts of transport systems (Environment and Urbanization, International Institute for Environment and Development 2013). Studying gender at this level would require inquiries into how masculine and feminine forms of thought get written into transport research institutions and how transport has been construed as a field of study. As the Environment and Urbanization, International Institute for Environment and Development (2013) argues, the discourse on diversity and differences in urban and transport experiences should cut across planning and policies, and in a more meaningful way apart from simply disaggregating data according to categories of sex, age, ethnicity, and income. Equally important is how these social identities are played out in public space, that is, how various groups appropriate the city through transportation and mobility and exercise their “urban citizenship.”

Theoretical debates on women, gender and development among academics, scholars, activists, policy makers have gained ground during the past two decades, alongside the influence and power of the activism, policy, and legislative advocacy of various international, national and local women’s organizations in many parts of the world. For instance, Action-Aid launched the Safe Cities for Women campaign in 2016 to address violence against women in urban public spaces, which also highlights the gender-blindness of urban planning, including transport planning, and neglect of strategic approaches to ensure gender equality in terms of its processes and results.

Despite the fact that transport studies is closely and tightly linked to the technical, engineering and the “hard science”, and that many professions declare “transport” as the field of specialization of their disciplines, the theoretical relevance of studies pushing for more interdisciplinary cooperation in transport research must not be underestimated. There is an increased acceptance of an interdisciplinary approach to urban transport research, though the theories that have emerged from such an approach are still thin in their explanatory potentials on the relationship between women and transport.



## 1.4 Research Objectives and Justification

The main objective of this research is to bridge insights from emerging perspectives in urban transport studies and gender and development studies. In doing so it seeks to provide a perspective that can help explain the disturbing outcomes of the transport and poverty links mentioned above. It argues for the need to probe deeper into matters of “framing”<sup>8</sup> issues and interpretation of data and information, to fully appreciate the workings of deeper structures behind these manifest realities. The research may be regarded as being situated at the cutting edge of transport studies and gender and development studies, being both interdisciplinary fields. Therefore, this thesis provides an intersectional framework on Transport Justice from a user perspective, based on data collected in a multi method approach.

The central policy relevance of this research is its emphasis on transport users, particularly women as a social group, whose marginalization, invisibility and lack of voice remain a reality in many countries. By capturing the key messages of the emerging policy discussion on transport deprivation in developing countries, the research deepens these messages by showing their experiential meanings from the perspective of transport users and the problems they face regarding access and safety. This will be contrasted with the view on access inscribed in the conventional frameworks of the policy discourse on transport needs, so as to argue for a case of serious revision to be able to address the complex problem of transport deprivation and enhance the quality of life of low-income groups, especially women belonging to this group.

To elucidate the experience of the Philippines in transport policy, the research brings the fore the mobility needs of a range of people belonging to low-income groups (women, very old people, and very young people) and their access problems. By highlighting differentiated experiential meanings of access to transport in Davao City, this study is a pioneering initiative given that there are few attempts in the country to tackle gender and transport in a more focused manner, although there is an on-going debate on gender and development. By articulating central issues and concerns in the debate on gender and transport taking place at the global level and anchoring them in the debate on gender vis-à-vis transport policies in the Philippines, the study seeks to engage with various actors in policy and planning in local development as well as other decision-making arenas.

The aim is to stimulate fresh discussions on how the allocation of scarce public resources in the Philippines may be done differently to tackle the problem of transport deprivation, moving towards a more grounded and gendered understanding of transport justice.

### 1.5 Epistemological Structure of the Research Design

The theoretical approach of the study cuts across several debates in the arena of transport research and feminist research and stands at the crossroads of fierce divides among quantitative and qualitative researchers in the social sciences. To overcome the maze of debates, the overriding approach of the thesis is methodological pluralism which combines research approaches to obtain various viewpoints on the research topic of gender and transport. This includes the use of mixed conventional and alternative methods, quantitative analysis using the survey method, analysis of archives of a hospital, text analysis of government documents related to transport policy, focus-group discussions with transport users, field observations and one-to-one interviews with women of different profiles in the city.

Firstly, in a rather functional way, the thesis surfaces the missing voices in the transportation planning and system, investigating their needs in the light of their experiences, the current conditions within the city in which they tread. This includes how women themselves have asserted their presence in the city or, on the other hand, been made invisible in relation to urban development and competing transport technologies. Second is that in a more constructivist way, the thesis examines the views by multiple actors in the policy landscape, especially among the more important actors regarding urban transport, and what consequences these have had on local urban land transport policy.

Methodological pluralism enables the researcher to use different techniques to get access to different facets of the same social phenomenon (Carter 2003, Danermark, et al. 2002, Sayer 2000 as cited in Olsen 2004: 6). It is an ongoing dialogue which ensues through the contrasts and contradictions of what surfaces, what appears as self-evident, what is unmasked as underlying the various discourses, and the spectrum of differences vis-à-vis the official pronouncements on the same things (Olsen 2004).

Feminist scholars have scrutinized inter-subjectivity within research (Oakley 2009, Harding 2004, Ramazano and Holland 2002) as a way of putting importance on various modes of knowing and value on the exchange of ideas and feelings among researchers and respondents in a research (Assister 2000, Collins 2000 as cited in Hemmings 2012:148). These experiences, very unlike the expected detached tendency of research conventions, put forward the central importance of emotional connection which was considered necessary for self-awareness both for personal growth and social change. Feminist epistemology implies the ability to appreciate the “Other”, to render them a subject rather than object of inquiry, as central to an alternative, politicized epistemology (Hemmings 2012:151).

Adopting feminist epistemology refreshes the discourse on transport studies and development as whole. As Nelson (1990) observed, science is a dynamic entity that is also influenced by its social and political environment, including gendered experiences. There is room to dialogue with mainstream science, to bring in scientists and engage them toward cooperation. And because mainstream science is dominated by empiricism, this dialogue will also have to accommodate this epistemology at least in the beginning.

The research epistemology in this thesis is one that combines empiricist methodology with feminist political goals (Nelson 1990, R. Campbell. 2004, Sobstyl 2004). Feminist political goals are carefully laid out by setting an agenda and theorizing in one context with the end in view of understanding, contributing and influencing the current economy of knowledge. Feminists (Connell in Harcourt, 2016: xvi) need to capture the essence of feminist theoretical work from beyond the global metropole as it is believed to be a critical element of building the intellectual resources for global feminism. This is precisely what defines contemporary theory. The reflexivity of the adage that questions of theory are largely questions about practice, reiterates that a fresh outlook on the dynamics of social change can best be expected from only the most effective forms of contemporary theory.

It is well acknowledged that the field of transport is dominated by men. Transport research is likewise steeped in the positivist and empirical approaches, thus a possible way to start to influence and engage various researchers is to dialogue through approaches they are familiar with.

Within the continuing debate which rages due to the belief that it is impossible to merge the norms of empiricist inquiry with pursuing feminist agendas, the primary attack is against the rigidity of the positivist roots of empiricism, such as the inability to treat participants as subjects (Harding 2004). This thesis, however, is grounded on the belief that an epistemologically grounded feminist research may be able to present a conception of social knowledge which respects the importance of contextual values.

## 1.6 A Sociological Approach to Transport

The technocratic view is also known as the view of the expert which can be traced to the Enlightenment when individuals began to acquire power to shape and direct societies through scientific and technological development (Seeley 1996 as cited in Karvonen and Brand 2009). These made technical experts influential in public policy and city building. The technocratic view symbolizes the tenets of modernity including efficiency stability, functionality, objectivity, and most importantly, progress (Karvonen and Brand 2009).

Vasconcellos (2001), a transport engineer and planner, criticized transposing models and methodologies applied in high-income countries to the reality of low and middle-income countries. He proposed that an approach different from the usual economic approach is necessary to better understand the realities in developing countries. (Vasconcellos 1997: 247) Reviewing the essential differences in various approaches during the past decades, he argued that the developing world required a 'sociological approach' to transport, which focuses on individuals instead of vehicles, lives instead of trips, and within a framework of equitable provision. The following table emphasizes how a sociological approach, in contrast to the technical and social analysis approach, can bring significant information into policy and planning which would highlight inequities which are often masked in the traditional approaches.

Table 2 highlights how the sociological approach would require detailed, disaggregated data from individuals as opposed to aggregated information about vehicular travelers. An activity-based approach could be the start to generate important data. Vasconcellos (2004) mentioned activity diary surveys as able to produce rich personal and household data which would enable a much wider range of possible behavioral responses to

transport system changes. Most important, these techniques have the capability of identifying the transport deprived or those individuals and households with greatest transport disadvantage.

**Table 2**  
*Essential Differences of Approaches*

Data used (nature)	Data used (nature)	Preferred elements for analysis	Preferred focus of explanation	Preferred elements of evaluation
Technical	Quantitative	Vehicles	Individuals	Economic efficiency (cost-benefit analysis)
Social	Quantitative and qualitative	People in general	Individuals	Economic efficiency (with social analyses)
Sociological	Quantitative and qualitative	Political beings and their roles in traffic	Individuals, family, social groups and classes	Economic and social efficiency; with equity analysis

Source: Vasconcellos 2001

The push for the sociological approach is affirmed by Rosenbloom (as cited in Fainstein and Servon 2005). She emphasized that standard transportation research has indeed used only a few variables, i.e., household income, household composition (usually size) and auto ownership, to predict future travel demand and modal choice. Many critics have also been vocal about the drawbacks of data collection and analysis purely on an aggregate level in some preordained geographic area or zone, rather than the individual and household approach. Rosenbloom (2005) points out that this aggregate approach results in an unsuccessful prediction of the effect of existing policy (1) on different groups, (2) the responses of such groups to different policies of the government, and (3) the impact of demographic and societal changes on travel behavior of men and women. An investigation of individual travel differences could address many of these current research gaps.

Vasconcellos (2001) puts forward the idea that this alternative approach is not only urgent and long overdue, but it is the only way the

crucial element of equity could be tackled head on. He even pushes further, radically proposing that this approach is not meant to complement existing approaches, but more so, it is high time to replace what he considered as outdated approaches. While a liberal approach calls for efficiency even at the expense of equity, the alternative approach calls for equity as the primary objective provided that at a minimum, efficiency which is socially accorded is ensured.

This study adopts the sociological approach to transport which involves two layers of analysis: 1) the relationship between women and modes of transport; 2) women as transport users as social and political beings whose agency shapes and is shaped by transport policy.

A sociological approach to transport can deepen understanding on transport needs and service delivery in the city, as it tries to go beyond standard transportation research. As mentioned earlier this type of research is biased towards relation between income level, auto ownership, based on which future travel demand and modal choice are predicted. By contrast, a sociological approach gives more attention to the ways in which women engage with transport as pedestrians, passengers and drivers and how gender relations shape this engagement.

It is this context that confirms the need to develop a methodology to measure social benefits which combines equity and efficiency criteria. The thesis anchors its perspective on an approach in such a tradition.

## 1.7 Organization of the Thesis

My thesis revolves around three arguments which are reflected in the organization of the chapters. The first argument is that a better understanding of the interface between gender and transport can deepen the appreciation of a transportation planning and policy in large cities should be grounded on the realities of the different kinds of people who are travelling within them. The life of the city is entwined with the lives of the people living within it in multiple ways. Chapter 1 gives the reader an overview of what the thesis is about amidst a myriad of societal trends in the landscape of the development debate. It introduces the reader to the research problem; the knowledge gap being addressed and what the research aims to do to address these gaps. Chapter 2 aims to familiarize the readers with the literature on conventions in the transport research arena as well as the

debates in the intersection of culture, gender and transport, which has implications for policy. Chapter 3 is an explanation of the methodology of the thesis, linking research objectives, accompanying questions for each objective, and the selected data gathering methods. The analytical approach and the feminist methodology applications are found in this chapter, as well as ethical considerations and limitations of the research.

My second argument is that in the light of gender, the policy consensus with regard transportation remains in the hands of the technical experts. Their neglect of the cleaner modes of walking and non-motorized transport used by the disadvantaged in the city cannot be discounted, as well as the consideration of the needs of women having limited policy traction. Chapter 4 shows the experiences of transport users as regards the provision and access of different modes of transport in the city and puts women at the center stage by highlighting their views of “place” through their life in Davao City. Chapter 5 presents the third argument: as a result of neglect of technical planners, that is, the safety and personal security of men and women, remains invisible in the plans and projects of the city.

Finally, I will close through a synthesis of the earlier three arguments through the conclusion in Chapter 6. This last chapter is a reiteration of the potentials of carving a space for a user-focused approach in urban transport policy, specifically the methodological and planning implications in terms of co-construction<sup>9</sup> of the urban transportation system in the city.

## Notes

<sup>1</sup> Parts of this chapter are drawn from the author's previously published work (Rivera, 2007, Rivera, 2008)

<sup>2</sup> The infrastructure sector, including transportation and communications has traditionally been male-dominated and largely considered as gender-blind. The Department of Transportation and Communications in the Philippines (DOTC) has 13 attached agencies and corporations and three line or sector offices, covering rail, air, water, and the communications sectors. The three offices are the Land Transportation Office (LTO), Land Transportation Franchising and Regulatory Board (LTFRB) and Philippine Coast Guard (PCG). The 13 attached agencies are the Toll Regulatory Board (TRB), Office of Transport Cooperatives (OTC), Metro Rail Transit 3 (MRT3), Light Rail Transit Authority (LRTA), Philippine National Railways (PNR), Philippine Ports Authority (PPA), Cebu Ports Authority (CPA), Maritime Industry Authority (MARINA), Manila International Airports Authority (MIAA), Mactan-Cebu International Airports Authority



(MCIAA) Philippine Aerospace Development Corporation (PADC), Civil Aeronautics Board (CAB) and the Civil Aviation Authority of the Philippines (CAAP). Top executive positions (Secretary, Undersecretaries and Assistant Secretaries) continue to be occupied by men. Overall men employees outnumber women employees. The only areas with more women employees are in administration and finance. (Illo et al., 2010)

<sup>3</sup> “...the paradigm of rational man”, [sic] underpinned by “... neoclassical economic concepts, focusing upon the representation of people as individual rational choice makers, interacting together to form a state of equilibrium” (12) and acting “... to maximize her utilities...applied to traveler behavior to stimulate choices of destination, mode, route and time.” (Avineri, 2012 :523 in Levy, 2012: 48-49)

<sup>4</sup> The label “developing” has many definitions, but this usually refers to low and middle-income countries based on the World Bank definition of average income per person. The World Bank 9 (2009) defines that based on GNI per capita, every economy is classified as low-income if USD 935 or less; lower middle income USD 936-3,705; upper middle income USD 3,706-11,455; and high income USD 11,456 or more.

<sup>5</sup> A broad study of ten developing countries including those in Asia such as Bangladesh, Philippines, India (Quisumbing, Haddad and Pena, 2001) found weak evidence that female-headed households experience higher incidence of poverty than male headed households. They caution against drawing quick inferences about this relationship

<sup>6</sup> To illustrate, transportation is little mentioned in the Millennium Development Goals (Hook, 2006). This silence has been noted as a serious gap in tackling the gendered dimensions of poverty. (J.D. Riverson et al. 2006 in Roy, 2010)

<sup>7</sup> Khader (2017), describes the contribution of feminist philosophical approaches to the discourse of globalization and development. Specifically, she states that feminists root their analysis to real-world problems brought about by neoliberalism and an active dialogue with social movements to respond to these, in contrast to non-feminist approaches that begin with theoretical commitments. In doing so, feminists seek to transform the discourse, both within the arena of the academe and politics, to recognize the diverse and intersecting points of women’s vulnerability and marginalization, beyond poverty.

<sup>8</sup> Frame consists of a mental model which becomes a filter through which an issue, topic or situation is observed, and a research problem is defined. Frame can facilitate understanding or confuse an issue, especially when the values behind the perspectives are assumed rather than openly discussed



<sup>9</sup> According to Jacoby and Ochs (1995), co-construction refers to a joint creation of a form, interpretation, stance, action, activity, identity, institution, skill, ideology, emotion, or other culturally meaningful reality. The co- prefix in co-construction is intended to cover a range of interactional processes, including collaboration, cooperation, and coordination. However, co-construction does not necessarily entail affiliative or supportive interactions. An argument, for example, in which the parties express disagreement, is nonetheless co-constructed (Jacoby and Ochs 1995).

## 2

## Gender Issues in Transport Planning Models

### 2.1 From Auto-Mobility to Multi Modality and Transport Justice

Transport is known to be one of the most significant investment sectors for many low-income and middle-income countries. Despite the undeniable key role of transport in economic development, classical research on transport and planning tend to rely on methods of analysis for forecasting demands and evaluate impact of projects that miss the perspectives of users as subjects differently placed in the hierarchical social order (Levy 2012, Turner 1996, Vasconcellos 2001). At best such methods pay attention to income and lifestyles (or class) but do not fully address the full range of impacts of transport on the lives of men and women as users (Blumenberg 2004, Tiwari and Jain 2012, Rosenbloom 2005, Tanzarn 2008). These impacts can be differentiated by the particular mode in use, including public transport, private motorized vehicles, multi-modal means and so forth. (Cervero and Golub 2007, Sohail et al. 2006, Tran and Schlyter 2010). Another observation is that while there are studies over the past decades that surfaced gendered data on transport use,<sup>10</sup> analyses which consider the social and cultural dimensions of transportation (and not only infrastructure and automobility) as it intersects with gender, are scarce.

In the Asia-Pacific Region, the field of transport is strongly influenced by the vested interests of industry. It is thus more concerned with competitiveness in reaching some segments of the population as consumers and users of services, and less oriented towards meeting the greater challenges of social equity and environmental burden-sharing (Vasconcellos 2001, Business Monitor International Ltd. 2010) Despite the fact that the field of development planning has evolved from one which assigns primary importance to state-led discourses and initiatives into an arena where

diverse stakeholders can present and argue for their perspectives on development and options, the field of transport in this region continues to be relatively immune to critical perspectives, including gender (Fouracre et al. 2006, Gesellschaft fur Technische Zusammenarbeit (GTZ) 2007, Kusakabe, 2012, Plessis-Fraissard, 2010). It can be said that the upsurge of efforts in research and advocacy to incorporate gender issues into the policy domain (health, education, agriculture) has barely reached the transport sector. (Blumenberg 2004, Babinard 2011, Riverson 2006). This shows the need to find innovative ways to re-conceptualize the link between gender, research, and policy in order to make it more applicable to transport research.

This chapter<sup>11</sup> provides a discussion on gender, women and transport, using a development lens to present the scope and range of issues relevant to the realities in the low- and middle-income countries. The aim is to clarify the main paradigms that have been applied in studies on gender and urban transport. The chapter is organized as follows. First, the normative definitions on transport are presented, their components and contextual applicability are unpacked. The aim is to familiarize the reader with the debates about intra-city transport, and the key issues regarding the applicability of this normative framework in a process of “development”. Second, transport in research and planning as a field of study with special characteristics is discussed to explain the placement of urban transport as a component of this field. Third the chapter brings in the debate on gender analysis of transport and the knowledge gaps that have been identified, such as: women as the missing users; gender equity as the missing principle; culture, gender and “spaces of vulnerability” as the missing dimension in transport planning.

### 2.1.1 Defining Transport

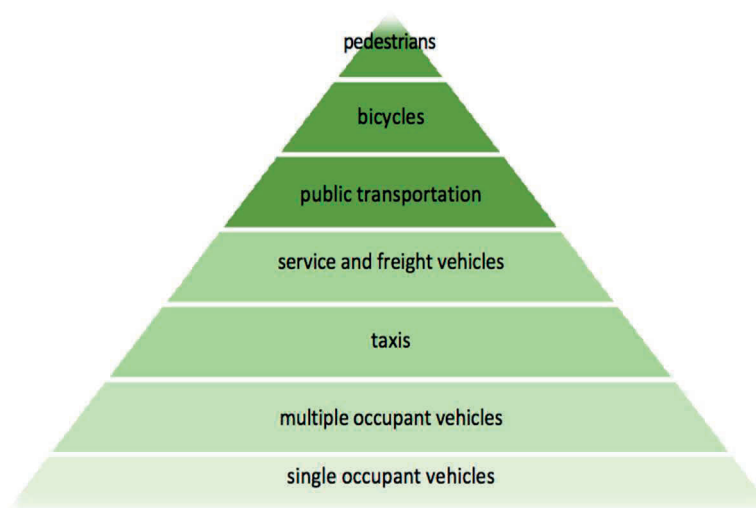
Transport is the relatively controlled circulation of people from one place to another. It indicates the purposive, short-term, and repetitive movement of people. Transport is also the connective infrastructure linking spaces in a city and the medium of social interaction and intercourse. Transport has two elements: “transport infrastructure and transport services” (The World Bank 2002). Transport infrastructure includes all facilities channeling the movement of vehicles and people, including roads, pedestrian paths, bridges, pavements, sidewalks, public transport terminals and waiting sheds. Transport services include the various modes of

transport, classified according to a hierarchy of value in relation to their occupation of public space. Modes of transport are the different ways in which movement from one place to another can be arranged and undertaken.

In recent decades, transportation planning is undergoing a paradigm shift, which changes the ways in which transportation problems are identified, analyzed, and evaluated (Litman 2013). As Litman points out, previously the evaluation of transport system performance was based on the speed, convenience, affordability of motor vehicle travel, and automobile-oriented improvements. Today a more comprehensive approach is emerging with an increased acceptance and usage of the concept of “multimodality” (Patton 2007, Litman 2013).

Whereas auto-mobility – the utilization of private motorized vehicles as the major means of transportation – has been influenced by a dominant assumption that the use of motor vehicle is efficient and safe, mass auto-mobility has unintentional hidden costs, such as: hazardous pollutants due to emissions, higher mortality rates, and social segregation.

**Figure 4**  
Green Transportation Hierarchy



Source: Litman 2012:5

To date, there is no comprehensive study on the gendered use across transport modes as identified by Litman (See Figure 4 above). Related studies in this regard, however, show transportation preference and use of women and men and among income classes i.e., private transportation versus public transportation. For instance, gender differences in the use of public transportation is more pronounced among lower income classes, with women accessing this more often than men by as much as 71.1 percent (Sanchez and Gonzales 2016). In several countries, men also choose private transport by more than 80 percent of all their trips, regardless of age, education level, driver's license, private transport access; location, household size and net income (ibid.). In Pollard and Wagnild's review of studies in walking (2017) it is noted that 34 out of the 36 provided gender-disaggregated data. Gender was not a significant factor as regards the overall level of walking, or in relation to transport, duration or frequency of walking. Generally, however, women, more than men, walk for leisure; in one study (Japan), men more than women walk to their place of work.

The "multimodality" model is driven by the application of social equality as a principle and environment-friendly values. It suggests that transportation infrastructure and practices embody social diversity by accommodating multiple transportation modes. Through negotiations over urban transportation, the concept of multimodality can permit a closer examination of the predicament of living amidst social diversity in a shared built environment. Multimodality may be regarded as a conceptual shift in transport planning, consistent with the rise of multiculturalism in public debates, together with the growing concern about environmental pollution and its impact on biodiversity, and broader issues connected with lifestyles and climate change. An emphasis that crosscuts the debates on multiculturalism, biodiversity, and multimodality is the "diversity" presented as a value for addressing contemporary complexities (Patton 2004:136 as cited in Litman 2012:5). In the context of urban transport, Litman specifically directs attention to planning practices in some urban areas known as "congested urban corridors". Here, a "transportation hierarchy" is established. In this hierarchical classification, priority is given to the modes of transport that are more resource efficient, over the mode of single-occupant car travel.

Whereas the framework used to define transport efficiency has been redefined in transport planning scholarship and practices, in the Philippines, as in many Asian countries, urban transport planning remains

deeply entrenched in the conventional framework in which motorization is seen as the barometer of development and progress (Dimitriou 2010, Feng, et al. 2010). This presents a very limited view of transportation planning, particularly because it neglects various issues such as high pedestrian volume and multi-modal transportation, which includes bicycles, motorized two-wheelers, rickshaws and other forms of non-motorized public transportation modes and even informal transportation modes. (Feng et al. 2010, Johnston 2004, Khisty and Arslan 2005, Samberg, et al. 2011, Zheng et al. 2011). Instead, transport planning is focused on construction of roads and related infrastructure (Freeman 2009, Gwilliam and Shalizi 1996). Another critique in adopting conventional transport planning methods is its expert or technocrat-centered approach, leaving little space for public engagement in the process to identify their needs and issues, and even sustainability measures grounded on their realities (Jones et al. 2016).

In this situation, the transportation hierarchy may be depicted as the inverse of the one based on green values. From a gender perspective, with the exception of the upper-class, the category of single-occupant vehicles rarely applies to women. In fact, a GTZ study (2007), shows that as a population group, women generally have a lower incidence of vehicle use and a higher incidence of walking. In contrast, men have greater mobility when looking only at motorized modes. When considering all trips (motorized and non-motorized), women make more trips per day (more mobility), but the costs in both time and money are higher. In other words, women tend to have less accessibility than men to transport.

This phenomenon partly reflects their financial situation as well as position in household decision-making in resource allocation. Affordability of ownership of vehicles or payment for services depends on the household budget and its allocation which is far from being “gender-neutral” may vary between different contexts of household relations. Nevertheless, for those women who are deprived of ownership of a vehicle, or whose income is too low to pay for transport services, their daily mobility become restricted. When walking is the only option, the issue of time poverty and its limitations on access and choice in income-earning opportunities cannot be ignored.

### 2.1.2 Transport Justice and Deprivation

While the idea of transport as a development concern has been recognized for years, its links to social justice, or more specifically gender justice, is yet to find itself mainstreamed in transport planning. Much of the literature on transportation studies and transport planning revolved around its function to increase the mobility of people which in turn puts to center the question of how to increase transport accessibility. Thus, there is great attention given to infrastructure and transport modes and systems in development discourse.

However, a more critical issue remains to be unpacked in the discussion. Beyond structural concerns of transportation – assumed to lead to increased mobility of people, goods and services, as well spatial accessibility – there should be an interrogation of the social, cultural, and even political dimensions of transport and transport planning. Here, the reality of diversity of people and communities – their needs and the meanings they attach to a defined space and movement – is relevant. At the very least, it should no longer be assumed that the experience of transportation and its benefits (and costs) is uniform across the different groups in society.

In this regard, Karel Martens (2012) underscored two relevant points in his argument about justice in transport: First, space is inherently unequal because of its division of center and periphery. Access to the goods and services, tangible, and intangible benefits, which converges at a “center”, will be differentiated among people based on their location relative to these. People located farther away, or those in the “periphery”, may have need for more transport and other related services, whether these refer private motor vehicles, available and reliable public transportation modes, infrastructure such as roads, bridges and bike lanes and walkways. Apart from location, people’s capacities to navigate a given space are also considerations. This covers not only to their physical attributes and resources, but other factors such socio-cultural meanings attached to their movement in public spaces are relevant (e.g. children traveling alone, women driving).

Secondly, mobility and access have become defining features of economic, social, and political life in as much as the extent that people are able to exercise them is indicative of their capacities to participate substantially in these arenas. Martens (2012) connects this to the rise of motorized which not only widened the dispersal of economic, social and political sites

of participation across space. This inevitably influenced the “life opportunities” of people, that is, with some people possibly having more or less access to them than others. Mobility has become a form of capital that can be converted to other forms of capital, such as basic goods and services, employment, or social networks.

The inherent inequality in spatial distribution vis-à-vis mobility and access through transportation are key concepts in transportation justice. Transportation justice is opposite of transportation deprivation. Vasconcellos used the term “deprivation” instead of “poverty” because the latter is usually taken in terms of lack of material resources (including money) while deprivation is a more qualitative term, relating to a lack of access to economic opportunities, social services, and interaction (2001).

Transposed to the idea of transport justice, justice in this sense should address not only the lack of transportation per se, but also consider that better transportation should lead to social justice outcomes such as improved economic opportunities, social services, and networks, particularly for the already marginalized groups. Similarly, Martens forwards that justice in transport should focus on and lead to the distribution of the social good which transportation is expected to bring, rather than its individual components such as better infrastructure, mass transit systems and traffic regulations.

Gender perspectives further qualified the idea of transport justice from the standpoint of women – particularly low income<sup>12</sup> women – by highlighting that (re)distribution of transport goods, services and opportunities is but one of the requirements of justice: there also must be recognition and representation or participation parity (Fraser 1998, 2005).

**Redistribution** refers to access to affordable transport for the working poor and their families in the urban areas (low-income workers, low-capital, own-account workers).

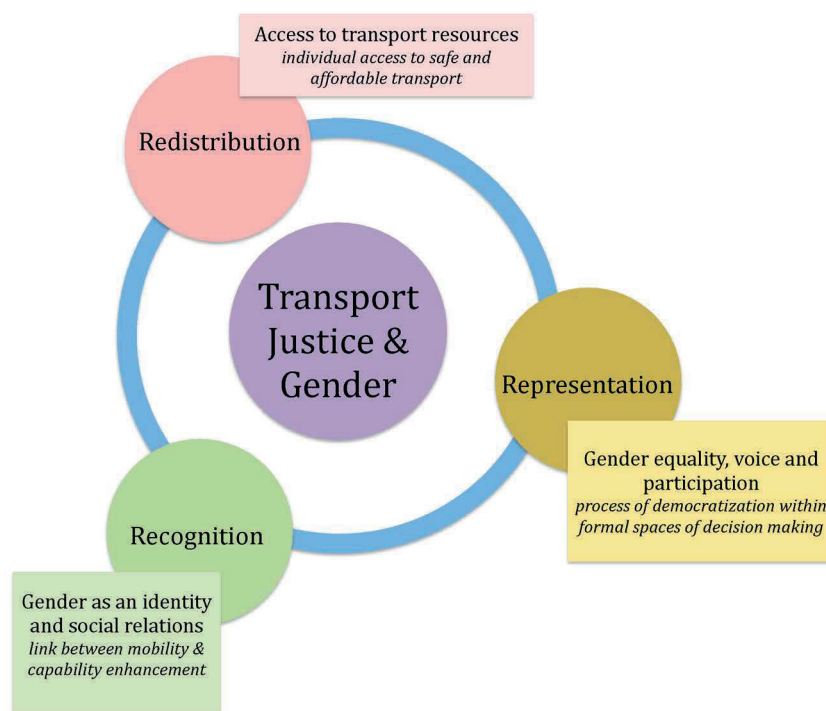
**Recognition** requires taking cognizance of gender-based differences in transport needs among the urban poor, including safety and personal security, in view of male and female identities between linked to social roles, expectations and lifestyles and their contextual significance.

**Representation** or participation parity requires a process of democratization within institutions of decision-making, allowing for the articulations of voices on urban transport that have been so far marginalized to create more space for bottom-up policy research in the field of urban



transport that seriously take into account the needs and interests of urban low-income communities.

**Figure 5**  
Conceptual Framework on Transport Justice and Gender



## 2.2 Women, Gender and Transport in a Development Context

'Development' has historically been equated with economic growth by dominant development theory. Through the decades, this view has been challenged, criticized, and exposed as a biased theory which produced biased practices. Critical theories on development have pushed for a model of development oriented towards human needs and promoting humane values (Truong 1997). Thus, the concept of Human Development emphasizes that evaluation of development outcomes must place the human ac-

tor at the center stage of development processes. Subsequently, the democratization of public space becomes a necessity to human creativity, participation, as well as individual and institutional accountability (Haq 1996, Sen 2009). The development context is therefore not only to be taken as a given, and measurable according to certain key indicators. “Development” is also a process guided by some values (equity versus efficiency) and contested from different standpoints. Development, most importantly, is a gendered process.

Women form the majority of the poor, and in some countries, they form up to 70 per cent of the poor in both rural and urban areas. (UN Habitat 2013: vii). It is clear from a significant body of research (Uteng and Turner 2019) that, globally, as a result of gender differences in economic and societal roles, men and women differ in:

- The distances they travel
- The means by which they travel
- The purposes for which they travel
- The people and things they travel with and
- How safe and secure they feel when travelling

In a statement almost two decades ago, the Sustainable Transport Action Network for Asia and the Pacific decried that the transport systems and services that hardly meet the needs of the poor are disproportionately affecting women and their dependents. As Barter and Tanim, (2000) noted:

The lower the income of the household, the more probable it is that women will experience greater transport deprivation as compared to men. Transport deprivation may take the form of women’s use of inferior modes of transport compared to men, it may take the form of women’s journey having multiple purposes and thus generating greater anxiety in the travel context or it may take the form of customary or legal constraint on women’s right to travel or to use a particular transport mode.

The above quotation clearly refers to the issue of equity and transport. This is the voice of particular actors making the issues of equity visible to transport planners.

The literature on gender and transport treats the relation between women and transport in three distinctive ways: (1) women’s access to transport and the causal relations of their limited access as compared to

men; (2) gender in transport research and planning and how gendered assumptions have favored certain types of transport and excluded others such as multi-modality; and (3) enforcing safety standards for all with structures of access to safe transport. An examination on how gender issues are reflected in the field of transport studies is necessary to make women visible in transport planning, policy making and transport interventions. Treating women as a distinct transportation user group with distinct travel needs and interests is a key step to challenging the ruling paradigm that is male-centered.

The authors argue that development institutions are “too important to ignore” in the struggle for gender equality; hence the need for significant and sustained engagement within institutions that determine development outcomes (Razavi and Miller 1995).

## **2.3 Progress in Gender Analysis of Transport**

The evolution of the use of the term “gender” in place of “women” in the debate on transport can be best understood as running parallel to the historical context of developments in feminist thinking. In the 1970s, the roots of women’s subordination were traced to inequality between men and women, the sexual division of labor, and the non-valuation of women’s work within the household. Feminist thinking in the 1980s then spotlighted neo-liberal policies, the debt crisis, and top-down development projects to show the multiple links between the household, community, state, markets and the global economy. Issues concerning women, gender and transport are inextricably linked to these structural realities.

### **2.3.1 Women and Transport**

In women’s lives, transport provides greater access to various resources such as employment, childcare, education, health, and political processes. Women constitute a majority of the public transport market (Hanlon 1996). As consumers of transport services, women’s needs and issues are often assumed to be identical to men’s (Hamilton and Jenkins 1989) resulting to low level of awareness of women’s distinct travel needs. In other words, gender issues in the transport arena are severely neglected (Barter and Tanim 2000). Bryceson and Howe’s (1994) definition of transport adds weight to daily mobility, as transport is seen as the movement of people and goods for any conceivable purpose, including the collection of

water, fuel, or firewood, by any conceivable means, including walking and head loading. Thus said, three important points surfaces with regard to realities of women of low-income communities: (1) the mode of travel is not necessarily conventional or motorized; (2) the choice of mode must be given due attention, regardless of how unimportant it may seem; and (3) trip purposes should not be disregarded.

In an introductory article of the first major exploration of the topic *Women and Transport* that was published in Britain in 1989, Hamilton and Jenkins (1989) pointed out the ways transport policy had been gender-blind and had failed to integrate issues affecting women in particular. Gender-blindness means the non-recognition and non-provision of particular needs and priorities of women. The question of whether women's potentials is restricted by the state of transport cannot be answered by what little information is available as most planning and development decisions are undertaken by men with little or no regard for women's needs (Turner and Fouracre 1995). Gender-blindness in discussions on transport implies blindness to (1) women's gender roles, multiple tasks, specific needs for and patterns of transport use; (2) gender as power and norms related to women's mobility and permissible means; and 3) women's coping strategies.

Research on transport starting during the decade of the fifties until the early eighties, was outright gender-blind. Such gender-blindness is attributed in large part to the fact that researchers on transport emanated from the predominantly male dominated technical disciplines of transport planning and engineering, as well as transport geography. However, this gender-blindness manifested in the literature about transport conditions in the low and middle-income countries did not pass unnoticed. Constructive criticism emanated from the invaluable works of geographers who first registered their criticisms against gender-blindness.

More attentive interest in gender aspects of transportation slowly emerged in the mid-eighties. Research proceeded to address structural constraints on women's daily mobility (Law 1999). Geographers in the North were the forerunners of research on women and transport. One such research was that done by Pickup (1984) who utilized the concept of gender to explain transport patterns. This research cited gender roles as the primary reason for low travel mobility of women. Gender roles had three components: family roles, gender-related tasks, and conditions under which women travel. Although Pickup directed attention to unequal

access to household resources (such as a vehicle), the use of the concept gender role becomes not only problematic but also static, in the mold of the often-cited “women in development” (WID) approach in gender analysis literature. Social roles and their fulfillment cannot be detached from the context wherein role equivalence, consensus and choice of fulfillment are defined, negotiated, or imposed upon. By leaving out power relations this static approach misses out on the complexity of gender and its intersection with other social relations.

During the decade of the nineties, description and measurement of structural constraints posed by patriarchal social relations began to unravel in research on women and transport. Feminists during the past decade after the Beijing World Conference on Women called for future research to be more upfront about gender (Elson 1995, Jackson, and Pearson 1998, Kabeer 2000, Miller and Razavi 1998,). There were parallel calls by researchers who tackled gender and transport (Bryceson 1993, Tillberg 1998, Cervero 1998, Center for Transport Studies 2006).

### **2.3.2 Gender and Transport: A Question of Social Equity**

The conceptual shift from “women” to “gender” seeks to distinguish between biological differences versus socially constructed inequality. The use of the concept of gender as socially constructed inequality sets the stage for an elucidation of gender relations. Tackling gender relations implies a rejection of the tendency to homogenize the concept of “women”. Understanding disadvantages along dimensions of gender, language, class, schooling, leadership experience, and various other categories illustrates diversity and difference. All these dimensions must not be assumed in the concept “women.” The argument of the conceptual shift from “women” to “gender” is to move beyond concentration on women and men as unrelated categories, and to take the relations between them on board to reveal the complexity of unequal social dynamics through which resources are allocated, tasks and responsibilities assigned, values given, and power mobilized (Kabeer 1996).

In this context, the concept of households considered to be primary in resource allocation needs to be unpacked. Just as “household head” was criticized as a misleading term given many untenable assumptions with regard to household composition, the concept of female-headed households which signifies poverty came under attack (Jackson 2005). Being the head of a household would not necessarily be detrimental for a woman.

The call then was to unpack the concept of households in research to be able to sharpen the gender dimensions.

Parallel to the critique of the household as a social construct which calls for more precision to provide adequate guidelines for the debate on resource distribution and social equity, social constructivism emphasized the construction of gender identities, which begun to overshadow the beginning interest in structural constraints on women's travel situation. Research initiated by geographers revealed a range of positions which framed specific issues, giving rise to the tensions between emphasis on the material process versus the ideational process<sup>13</sup> (Massey 1994, 2005).

This is affirmed in studies which integrated the economic and socio-cultural dimensions of transportation use and experiences. Available literature about the low and middle-income countries also point out the need to take into account women's modal preferences in transport infrastructure planning. For example, one study in Dhaka, Bangladesh by the World Bank showed that 35 per cent of female commuters relied on cycle rickshaws as their sole mode of transport. (Peters 1999: 2) Another cites women using rickshaws in combination with bus services and scooters. One fourth of all women also relied on rickshaws for accessing educational facilities. When the government of Bangladesh recently proposed to ban rickshaws from the streets of Dhaka, they were in fact singling out not only the most environmentally friendly mode available, but the one transport choice most essential and accessible to women, thereby gravely affecting their mobility (Sustainable Transport 1998). Burton and Johnson's participatory research (2010, as cited in Grant-Smith et al. 2017) with socially disadvantaged communities identified factors such as class (as intersecting with race and ethnicity), disability and gender as having substantive impact on people's mobility and transport choices. Fritze's study (2007:63) also pointed to the difficulties of travelling with children, and accomplishing daily tasks involving so, when transport systems and built environments are not designed with their needs in mind:

Women and children (among others) are often poorly served by public transport which systemically discriminates against their needs based on an increasing neo-liberal push for service productivity and efficiency (even at the expense of equitable access). This is evidenced in peak commuter service bias in the policy, planning and delivery of services, and infrastructure usage practices such as overcrowding and crush-loading on vehicles which result in insufficient space for passengers to enter the vehicle without

causing physical (and sometimes emotional) discomfort to the other passengers ... These practices can affect women and children disproportionately because they already experience heightened safety concerns when using public transport.

### 2.3.3 Women, Transport and Mobility

The established body of research on transport has poured information on the transportation context in low and middle-income countries affecting women's daily mobility. Infrastructure and vehicle supply, expensive transportation costs with low-income groups spending higher percentage of their earnings on transport, the low spatial supply of public transport have been tackled as well as how all these affected the mobility of the poor, particularly women. However, such research was noticeably not being enriched by dialogue or developments in feminist theory. Domosh (2005) registered the increasing isolation of the emerging topic of gender and transport from the rich texture of research and experience of transport geography and feminist geography.

Today, in the twenty first century, it is a more crucial to witness the historical development of transport research on realities in countries with diverse contexts. The often linear tendency to import the high-income country perspective to low- and middle-income countries still prevails.

A perfect illustration of the resulting mismatch is how, through the years, authors have tackled mobility. Extensively taken up in transport and development literature, many authors define mobility simply as ability to move. The standard measure of mobility in transport literature is the number of trips made per person. Most of the models originated from the high-income countries and have been followed as a universal package within the rest of the world. In many references on transport, mobility is indeed used as a pivotal conceptual handle (De Boer 1986, Hall and Sussman 2004, Hamilton and Jenkins 2005, Matin 2002, Mumtaz and Salway 2005, Peters 2001, Tillberg 1998, Urry 2000, Vasconcellos 2001). The concept of mobility is however unable to capture the diverse gendered realities since the reproduction processes in society is not accounted for.<sup>14</sup> Reproductive processes take place through the organization of care (often referred to as the care economy) and its mixed arrangements, the variables of which depend on contexts (social income through state policy, private income, and kinship support and market availability of services).



Interest in the care economy marks a high point of interest in gender aspects of transportation. This is rather recent in transport and development studies. Much of this kind of research is concentrated in rural Africa, particularly in the Sub-Saharan region, vis-à-vis agriculture, food production, distribution, and economic growth (Masika and Baden 1997, Fernando and Porter 2002, Bryceson and Howe 1994), with little mention of the urban contexts. Similar transportation studies, whether in the rural or urban contexts, are even fewer in Asia. Another observation is that many of these studies are found in World Bank project reports (Shefali 2000, Fernando and Porter 2002, Vu Ngoc Uyen olmo, Du and Kurz 2003); for studies in Africa, many were also conducted by the World Bank and transport planners and researchers from Europe, specifically from the United Kingdom. In Lee, Vojnovic and Grady's (2018) study women's travel patterns and behaviors, covering work and non-work activities, they noted how much childcare work and other traditionally gendered roles influence of women's travels in terms of timing, duration, location of destinations, frequency and sequencing of activities, number of stops and trip length. This was affirmed in several earlier studies (Greed 2012, Hanson and Pratt 1995, Law 1999, Lee and McDonald 2003, Rosenbloom 2005, Uteng and Cresswell 2008); the concept of "trip chaining" or making several stops for various purposes within a single journey, captures this reality of many women (Primerano, Michael, Pitaksringkarn and Tisato 2008, Srinivasan 2005, Thill and Thomas 1987).

Research tackling the intersection of gender, transport and mobility is admittedly rather recent. This is a critical gap in literature. Sanchez de Madriaga (2013) coined the term "mobilities of care" to describe the travel experiences and needs of women, and as a key concept in understanding and addressing their issues. Indeed, as Hamilton and Jenkins (2000) point out, addressing women's transport needs has great potential to improve transport outcomes for children, and transportation planning in general (Levy 2012). However, transport research and planning very often neglect life course and gender-based analysis (Scheiner 2014), much less in transport policy formulations and service delivery (Fritze 2007, Greed 2008, Hanlon 1996, Sánchez de Madariaga 2013).

While mobility can be easily broken down into various operational indicators, this concept is more applicable in a developed world context where society is functionally organized (Center for Transportation Studies



2006, Vasconcellos 2003). Space is often, a distinctive, straightforward feature in developed countries in that functional boundaries in land use in cities in the developed world are more delineated by law and policy. However, space is more structured around distinct cultural, ethnic, and religious characteristics in most low and middle-income countries. The structuring of space by way of symbolic coding that selectively limits or facilitates mobility is an area where feminist post-structuralist analysis offers an important contribution.

#### **2.3.4 Integrating Gender to the Transport Discourse**

The thesis cannot simply try to create new knowledge but must also take into account the political implications of the research. To implement change, development studies research must be enabled to capture the plurality of human life and the plurality of meaning making processes. By going beyond affirmative research that creates certain explanatory models of how social life actually is, development studies research moves towards an emancipatory aim that politicizes human life and makes the marginalized speak. This necessarily includes the understanding that the marginalization of certain perspectives results from the establishment of explanatory models that actively exclude possible encounters with the marginalized, in the case of my research, those of ordinary women in the city.

Gender mediates the production and deployment of what can be considered knowledge. This research stresses gendered terrain, and this includes knowledge production. Gender, as much as other variables of class and race, determines too what counts as “true” knowledge. Socialist feminism is instructive on the underpinnings of women’s marginalization and exclusion from knowledge creation (Jaggar 1983, Haraway 1991, Rowbotham 1973) Women remain in nature and men are seen as the creators of culture/knowledge. Socialist feminists have harsh words for what is implicit in this viewing, for this seems to be saying that women are less human, existing as they are in the natural world. How can they engage in praxis -- the essential human activity of acting on the material to transform it for the fulfillment of one’s basic needs -- if they are nature-bound? Of what importance is knowledge coming from one who is not fully human? Feminist scholars and activists challenge the dominant view that only those things which can be measured and observed truly count. Women’s lived experiences constitute knowledge. This thesis advocates for ways of

building and adding to knowledge in ways that are inclusive, participatory, and empowering.

How does gender interact with transport arrangements and their underlying rationales leading to the formation of specific links between transport deprivation and capability enhancement among working men and women? Gender is an institutionalized system of social practices for constituting people as two significantly different categories, men, and women, and organizing social relations of inequality on the basis of that difference.

Like other multilevel systems of difference and inequality such as those based on race and class, gender involves cultural beliefs and distribution of resources at the macro level, patterns of behaviour and organizational practices at the interactional level and selves and identities at the individual level.

Gender is a dynamic structure and a term for a network of processes, phenomena, conceptions, and expectations, which through its interrelations gives rise to a sort of pattern-like effects and regularities (Levy 2012). Gender has two principles, or logics. Firstly, the logic of separation, based on the conceived dichotomy between male and female and meaning that these should not be mixed. Second is the logic of male as norm, based on a view of men as the normal and the universal.

That these logics can be found in urban policy and practice has been pointed out by various authors (Greed 2005, Markovich and Hendler 2006). Wajcman (2006) whose work dwells on the social shaping of technology asserts that functionalist urban planning is an expression of a symbolic division of the city into a “masculine” inner city and “feminine” suburbs. In the division of growing societies, women were relegated to the private and reproductive sphere. Home was woman’s place. By separating housing areas from industry and administrative and commercial centres, and by organizing transport space according to the conceived needs of men, women became even more removed from participating more meaningfully in public life.

This is also parallel to the history of planning related to the locational outcomes of continental Anglo-American planning efforts. In general, planning throughout the western world sought to impose rationality at odds with a sentimental view of human relations. Rosenbloom (2006) de-

scribes the initial basis of city development which was purely physical conception. After World War II, with the application of positivist social science methods, the male domination of city planning used order and efficiency as criteria to determine appropriate forms of spatial disposition. Planning was built on a contractual conception of freedom and legitimacy, and parallel to political thought, did not consider the particular needs of women. It was assumed that women should bear the principal responsibility for maintaining the household and raising children; household affairs were largely considered private matters, inappropriate for public oversight (Rosenbloom 2006, Greed 1994).

Even if reform was promoted by women, many of the assumptions underlying mainstream planning regarding gender was taken for granted. Only with the more proactive voices of women's organizations in the 1970s did planning go beyond concerns with inequities produced by class and race, resulting to keener attention to disadvantage resulting from gender. This critique reflected the substance of a wider feminist attack. (Rahder and Altilia 2004)

The critique did not revolve only on inequitable public policy but on the very epistemology and oral universe that underlay planning. For the principal justification of planning had always been rationality, but now rationality was being assaulted from the left as a legitimation of privilege and a part of a way of thinking that imposed an unfeeling, male view of the world (Beauregard 2003, Milroy 1992). Whereas until then the public interest had provided the broadly accepted governing criterion for planning, postmodern deconstructionists regarded it as a term that masked the real (white, male, capitalist, western) interest that it defended in the guise of representing all.

Thus planning, beyond enforcement of traditional morality, did not deal with the consequences of dependency and obligation which bound women. The application of the efficiency criterion to the city likewise promoted an urban form which prioritized aggregate wealth over equitable outcomes. Later, in the same rationalistic tradition, planners used models to predict travel and settlement patterns and develop plans for the most efficient spatial arrangement; in adding so, they assumed household behaviour and location derived from the journey-to-work choices of the man in the house and took as natural the household division of labor (Beneria 2003, Borja and Castells 1997, Markusen 1981 as cited in Rosenbloom 2005)

Parallel logics are at play in transport policy and practice, forming a transport hierarchy system based on ideology that transport policy is permeated by a logic of separation, while the logic of male as norm would have its transport analogy in the logic of motor vehicle and people missing as transport users as norm.

The transport needs of users are discursively suppressed by city planners and traffic engineers, as seen in their plans, measures and practices. Due to a lack of public debate or political discussion, city officials, politicians and planners have subordinated the transport needs of “users” to movement of motor vehicles, and non-motorized transport as less important mode to the motorcycles.

The emphasis of the thesis is on the discursive suppression of users’ needs and their subordination to policy discourse on motorized vehicles. The study will elaborate on how this suppression can be elucidated and understood with a gender lens. For the sake of clarity, it is not that motor vehicles and walking are masculine or feminine technologies, nor are they confined to be used by specific genders. Different modes of transport have male or female users. Men do own and drive private and public motor vehicles to a larger extent than women, and the private motor vehicle does have a significant place in male culture. This is, however, not the interest of the thesis. The thesis instead uses concepts from gender theory as an analogy when analyzing ideology and hierarchy in urban land transport policy and practice.

## 2.4 Analytical Issues on Women and Transport

The spectrum of approaches outlined in the preceding section is captured in the following discussion of researches on women and transport in various contexts, with special emphasis on low- and middle-income countries. Several related intersecting concerns permeate the existing work, making it difficult to pinpoint the central core of the problem or to make acceptable classifications of issues and concerns into stringent categories. Still, utilizing such themes can help better appreciate the issues on gender, women, transport, and development.

### 2.4.1 Defining Gender and Situating Women’s Interests

To reiterate, gender is a constitutive element of social relationships based on perceived differences between the sexes. Therefore, gender issues must

not be confined into a corner marginalized as “women’s issues” because gender constitutes social relationships between men and women. Thus, gender concerns both men and women.

Gender relations, like all social relations, are multi-stranded: they embody ideas, values, and identities. They allocate labor between different tasks, activities, and domains; they determine the distribution of resources, and they assign authority, agency and decision-making power. This means that gender inequalities are multidimensional and cannot be reduced simply to the questions of material or ideological constraints (Kabeer 2003.) Kabeer (2016:314) reiterates the processes which give rise to such inequalities by citing insights from early feminist writer Gayle Rubin, who wrote about “the endless variety and monotonous similarity” of patriarchal structures across the world. This means that claiming their rightful share of benefits for women are ultimately, very context specific with evidence about the varied texture of experiences of women in different parts of the world.

Therefore, women’s interests in the context of gender relations mean optimizing labor time and effort from the perspective of the women themselves. The concept of women’s interests could be seen more clearly in findings as how external transport interventions were destined to solely enhance men’s mobility at the expense of women’s welfare (Malmberg-Calvo 1992). To illustrate, research on intermediate transport (IMT) raise many important insights on how projects have glossed over the question of how men’s and women’s transport activities can be redistributed more equally. IMT improvements in particular were found to be enjoyed by men yet there were no attendant changes in the gendered allocation of functional tasks and associated transport responsibilities within the household.

Attention to the gender division of labor and activities is useful in helping understand travel demand or the reasons why men and women make trips to places at certain times. Existing research on gender and transport in the developed world already includes a substantial discussion on components of spatial and temporal differences in the organization of women’s work and men’s work, both paid and unpaid (Rosenbloom 2004, Grieco et al 1989, Hanson and Pratt 1995). However, little parallel work emanates from research in the low- and middle-income countries.

### 2.4.2 Culture and Gender Logic in Transport Planning Conventions

The intertwining of gender relations and cultural constraints emerge as a second primary area of interest in women and transport research.

Fueling the debate on cultural conventions are researches which suggest that taken for granted cultural rules concerning transport spell out cultural impropriety. Researches have surfaced the need to acknowledge the gendered disadvantage of women very specifically in discussions of women and transport. A case in point is the interaction of culture with various other factors which present challenges for women in using transport technologies. Various local contexts captured by groundbreaking research exhibit which modes of transport are or are not permissible for women to use.

Cultural conventions affecting the transport situation of women also consist of prohibitive religious practices. Specific religious practices tackled by Matin et al. (as cited in Fernando and Porter 2002) reveal that well to do women are more concerned with maintaining the family's *izzat* (respectability and honor).

As stressed by Fernando and Porter (2002) a focus on women's transport burden is not enough. The cultural conditions that constrict women's mobility limit their physical orbit and their command over the political and social processes that determine their lives. It is just as important to address gendered power relations that enable women to have greater mobility and more control over transport decision making in the household as well as in the wider political context.

### 2.4.3 Geography and Location

Interacting with culture affecting the transport situation of women are factors related to geography and location and how these shape women's economic, socio-cultural, and political realities. Patterns of mobility are complex and depend on the interplay of both cultural and access factors, plus geographical and locational factors. The latter two are well noted in the available literature as crucial factors on mobility patterns and transport burdens. Review of available work also reveals that research on women and transport in urban areas is scarce compared to existing work done about the transport situation of women in rural areas. Urban studies of

travel time and time budgets of women constitute a promising area for future research (Cervero 1998).

One study debunks the belief that proximity to urban centers and high density of transport in urban and peri-urban areas automatically mean better accessibility. Mukherjee (as cited in Fernando and Porter 2002) captured the journeys of rural women to and from the metropolis to emphasize this point. Domestic helpers, vendors, industrial workers, and government institution laborers who travel from the outskirts of Calcutta, India into the city spend approximately 12 hours outside their homes. Their daily travel experiences include overcrowded, irregular public transport, long waiting for transport, lack of facilities, and harassment by pickpockets.

Related literature also mentions how transport has not been integrated with discussions on settlement issues. For one, transport is not tightly woven in discussions on the location on credit, housing, water and basic services in communities. According to a study done in the City of Nairobi, 27 per cent of female headed household depended on walking as their primary form of mobility, compared to only 15 per cent of the male headed households (Barwell 1996). Hook and Peters (1998) also noted that women in urban areas are more likely than men to be dependent on walking as their only modal choice. Other modes are often not available to them, either because they are too expensive, or located too inconveniently and far away.

Research about households whose location is close to paved roads compared to off-road residences highlights location as a key concern. This is best illustrated by a number of studies done about public transport. In Belo Horizonte, Brazil, assignment of public transport routes meant poor women living in peripheral settlements had longer trips and changed transport more often than men (Schmink 1982). Added to locational factors such as unreliable transport services which translate into women's untimely arrival at urban markets (Fernando and Porter 2002) are those which influence gender roles and affect women's ability to benefit from transport improvements, as well as opportunities to purchase and benefit from transport. In Faridpur, a town 145 kilometers from the capital of Bangladesh, a village study presented how the majority of poor women travel by walking to the union center to participate in income generating activities. Social restrictions prohibit women from getting into public transport along with men. There are only a few seats reserved for women



in buses, and women are low priority for public transport. When buses are full, conductors do not take women into the buses. Women have to wait a long time for the next bus and often use rickshaws or rickshaw vans, which charge expensive fares.

#### 2.4.4 Transport Safety and Safe Travel for Women

A fourth issue is about safe travel for women. Concern about personal security during travel as well as being free from attack and physical harm is an important theme of gender and transport research.

Personal security has been taken up in conventional transport sector research, focusing on the vulnerability of pedestrians, cyclists and people using slow moving non-motorized transport modes. The vulnerability of women is covered, as women are usually pedestrians and users of slow-moving transport modes.

A gender aware transport perspective enables one to surface yet another dimension of safety in women and transport research. Bryceson (1993) explains that it is not simply a matter of balancing child carrying capacity with mobility, as most women are carrying children in addition to other loads. The nature of women's multi-tasking at any one moment in her workday dictates that she must carry an assortment of goods while transporting young children.

The above highlights how a large percentage of the female population carries a very young baby close to her body. In a study in Ethiopia (Abegas and Junge 1990), women spent an average of 3.8 hours daily carrying a child. Child carrying came second to food preparation as the most time-consuming activity performed by women.

Physical safety also means that women are free from attack during travel. Research on the geography of women's fear has revealed pervasive awareness of the reality of sexual assault on women. A study on public transport in Colombo, Sri Lanka, Faisalabad, Pakistan and Dar es Salaam, Tanzania (Sohail et al. 2006), surfaced views of respondents attributing to the lack of transport infrastructure the harassment of young girls, rape attempts on women and the danger for women to walk. Another research in Lima, Peru, discussed safeguards against physical attack and how sexual harassment on public vehicles restricted women's use of all types of transport (Anderson and Panzio 1986). In similar vein, a Philippine study brought to fore the sexual harassment experiences of women workers and



members of communities in Metro Manila (Herrera 2007). These are attempts to transform private cases of public transportation incidents into a public safety issue.

The Lima and Metro Manila studies above show how women riding public transport have employed an array of self-protection strategies and behavioral constraints such as traveling with a companion and deliberately avoiding certain places at certain times. These self-imposed measures of precaution have limited not only women's mobility, but likewise contributed to the continued underrepresentation of women in specific settings out of fear and risk. This is what has prompted government institutions involved in transportation to be involved in what is known as "safety audits." These have led to the creation of Safe Cities programmes in some countries, which involves fulfilling a set criterion as well as environmental design to enhance and improve safety (Trench et al. 1992 as cited in Law 1999).

#### **2.4.5 Intersecting Levels, Integrating Various Sectors**

A fifth issue on gender and transport concerns the intersection of transport with other sectors (Cervero 1998). The inability or failure of policymakers to consider and address the relationship between transportation policies and other government policies has serious consequences. One of the most obvious is that outcomes expected sought from such transportation policies do not happen precisely due to changes in other policy areas which have affected the conditions or assumptions inherent in such transportation policies (Rosenbloom 1977: 319).

Experience has shown how integrated approaches which combine transport with other sectors have more promising impact on women, particularly if they consider men's and women's transport-related roles, resources, constraints and priorities. Studies have seen the links between access to social and health services and transport, access to education and transport, as well as transport and access to trade and markets. These tackle the intersectionalities of parts of the lives of women in communities.

Most transport research during the past decades has been criticized to take a conventional and isolationist route of seeing transportation without connecting its other multi-faceted aspects. Thus, points disclosed in many researches about roads are very worthy to note (Bryceson 1993, Porter

2005). Road investments are presented as transport solutions for economic development but ironically, these have not automatically led to equal benefits for men and women.

Researchers found that the total stock of tasks of household transport has not actually changed as new tasks have replaced old tasks. Old tasks have also become easier to do due to improvement of transport (Dawson and Barwell 1993, Edmonds 1998). As there are no changes in gender relations or the gender division of household labor, the multiple workload burdens has become increasingly heavier on women's lives. Other authors are more straightforward by declaring that by promoting traditional road-based solutions; we are effectively directing 90 per cent of resources to serve just 10 per cent of the population, majority of women excluded. Simply building more roads is not going to alleviate poverty and may even make poverty worse (Hook 2006).

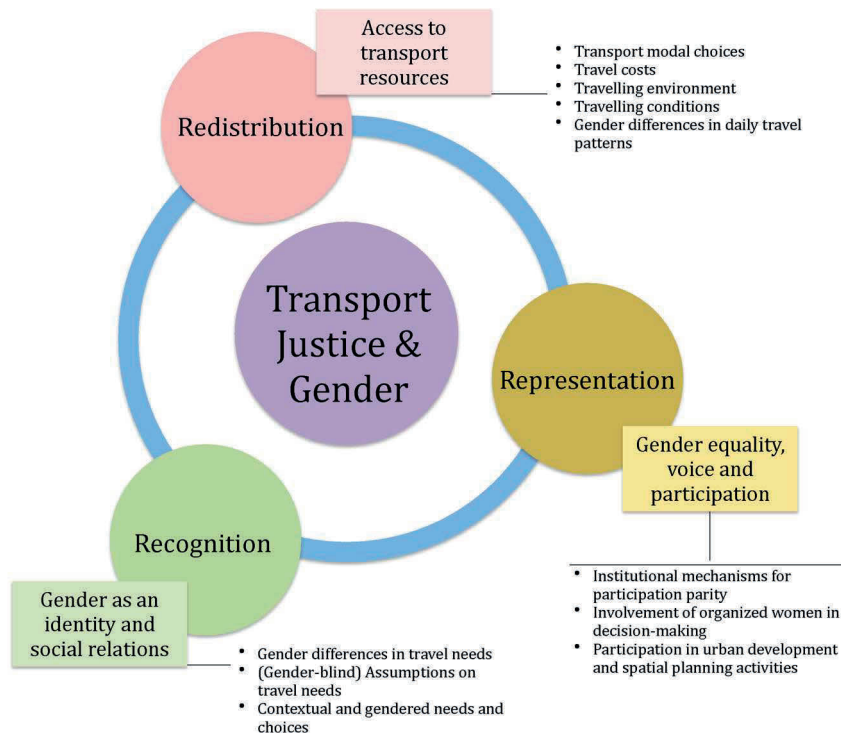
In a similar vein, intersecting levels on understanding women and transport has meant considering the merging of what gender specialists have termed as practical versus strategic needs (Moser 1993). The former means addressing short term survival level needs while the latter means addressing the level of structural and long-term transformation on women's lives. For example, positive impact of transport interventions has always been seen in terms of women's time savings. This has been criticized to only stress the potential benefits to overall household impact rather than to the implications to women themselves. Moser (1992) carefully identifies this thinking amongst development agency initiatives, describing it as a failure to give priority to women's strategic needs by instead prioritizing practical needs. This essentially sidesteps the deep seated political and economic dimensions of women's subordination in society, in favor of non-controversial attempts to instead address basic needs.

#### 2.4.6 Participation: Women Practicing Power

Last but not the least is the issue of women themselves charting the course for changes in their lives or what is well known in the literature as a sense of "agency." To address transport needs or to acquire and use transport technologies and services, men and women in poor communities usually must negotiate with powerful stakeholders— policy makers, politicians, local officials, transport providers, local government officials, and even financial institutions. Although women are responsible for most of the transport demand, they are not recognized by policy makers as transport

stakeholders. In assessing the level of transport demands and resources, women’s and community needs are nonexistent. As was given weight in the preceding sections, the harsh reality is that data on travel and transport burden is highly generalized and aggregated in many poor countries (Peters 2001). In recent years there have been a few initiatives to reduce discrimination and ensure a greater voice and influence for women’s needs and priorities in transport, and more generally in human settlements. Much attention can be seen in the area of income generation for women. It is now common to find discussions on women’s livelihood and transport needs together (Brown and Lloyd-Jones as cited in Rakodi and Lloyd-Jones 2002).

**Figure 6**  
Analytical Framework of Transport Justice and Gender



Women need to be more involved in the planning and implementation of transport interventions so that their perspective and needs are more central. Political representation by transport users, specifically women, is important. However, ordinary men and women in communities, without the confidence to register their travel needs, are relegated to the lower rung of captive transport users who are burdened with barriers to representation, because often, they are unorganized, making their demands invisible.

## 2.5 Conclusion

The preceding discussion showed in many ways how a rethinking process of outdated notions of work, the economy, and development- needs serious attention. The “economy” is not only the productive or commercial-oriented economy (formal and informal) which is solely measured in quantitative terms. A pure technology and infrastructure orientation still continues to dominate the transport sector; therefore, pressure must be pursued to push that the social and cultural aspects of transport be seriously articulated in the policy planning process. Integrating gender must take center stage in this rethinking process.

The work of women, excluded in policy and planning because it is not used for exchange in the market, must be made visible and be given value. Excluding the economy of social reproduction from the transport sector framework translates into ignoring equity and efficiency in the design and delivery of transport sector activities. The crucial task of reexamining conventional notions means treating the transport sector as a gendered structure, recognizing the implications of transport policies on men and women and implications of gender relations for sector level analysis and policy options.

This way, the crucial element of equity, or fairness could be tackled head on. This proposed approach is not meant to complement existing approaches, but more so, it is high time to replace outdated approaches. As the dominant approach calls for efficiency even at the expense of equity, the proposed approach calls for equity as a primary objective, integrated with enhanced efficiency because feminist analysis emphasizes that as you make use of half of the human resources of half of humanity, women are more motivated and productive due to rewards and encouragement for their productivity.

## Notes

<sup>10</sup> For example, previous studies have shown that there are gender differences in relation to reasons for traveling, transportation mode choices and travel patterns: women commute more than men, except for work-related trips (Olmo and Maeso 2013); - cite in bibliography women commute or walk to their destination more often than men (Diaz 1989, Monzon, Valdes and Xue 2008, Vega and Roman 2011); and despite having similar productive and reproductive roles and tasks, women's travel patterns differ from that of men.

<sup>11</sup> Parts of this chapter are drawn from the author's previously published work (Rivera 2007).

<sup>12</sup> Review of research on definitions, patterns and trends on low incomes suggest that the most commonly used definition of low pay or low income is equivalent to two thirds of the median wage for all employees in the economy (Grimshaw 2011: 3).

<sup>13</sup> The formation of ideas and the orientation of thinking about a phenomenon (in this case "transport" and transport policy).

<sup>14</sup> To illustrate, City Planning traditions did not deal with the consequences of the assigned responsibility to many women: dependency and obligation. In the application of the efficiency criterion to the city, planning promoted the urban form which most contributed to aggregate wealth rather than equitable outcomes. Planners assumed household behavior and location derived from journey-work choices of the males in the house and took as natural the household division of labor (Beneria 2003, Borja and Castells 1997, Markusen 1981 as cited in Rosenbloom 2005).

# 3

## Research Methodology

### 3.1 Introduction

This chapter<sup>15</sup> presents the components of the research design, the operationalization of key concepts and techniques of data gathering, showing how these concepts were used to bring to life the users' perspectives. The first describes the design and levels of analysis and explains the main indicators that have been used to give concrete meanings to transport deprivation, as a sub-concept affiliated with transport justice, from the perspectives of the users. The second section discusses the sampling methods as well as the data management and analysis processes implemented in the research. The section also describes the range of qualitative methods used in the study as well as the feminist research protocols it adopted. A summary table of the links between the research objectives, research questions and data gathering tools is included in this section. The chapter takes into consideration the values and limitations of the research methodology, weaving in a discussion of application and experience of methodological pluralism.

### 3.2 Research Design

This research moves in the direction of framing access to affordable transport as a social right. The research will tackle how gender systems interact with class and urban spatial differentiation leading to barriers of access to mobility for women as differentiated across geographical locations (within the city downtown or outside) and income groups (living below or above minimum wages). To do this, the methodology seeks to obtain original data at various levels (the household, the local community) to be analyzed with data obtained from debates on transport in the municipality and national contexts. The research espouses methodological pluralism. Various data gathering methods<sup>16</sup> were also used. In contrast to

the predominantly quantitative transportation studies available, this research is an attempt to use various data gathering methods. Quantitative approaches tend to conceal any variations in demand of interest to policymakers and planners together with much of the details of transport use and supply (Fouracre et al. 2006) There is a problem with the purely quantitative approach as it focuses on average values and patterns which reflect an historic and largely static picture of transport supply. I have opted to complement quantitative data with qualitative data in a way that both types mutually enrich each other.

The research location is in Davao City which is a major urban area in the island of Mindanao, specifically in Region XI, Philippines. Global attention has focused on Mindanao during the past years due to the peace and order situation.<sup>17</sup> Davao City as a primary city in the island of Mindanao is a meaningful starting point to explore urban transport and development on several counts: (1) Davao City being the largest city in the Philippines in terms of land area emphasizes an important site of research; (2) Davao City's sprawling urban metropolis has emerged as the business, investment and tourism hub for southern Philippines in recent years; and (3) the openness of the city government, civil society organizations, and local communities to conduct the field work was a major motivation to choose Davao City. To date, very few researchers have focused on social development and urban transportation in Mindanao. Neither has there been any research which covered gender and urban transportation in Mindanao cities.

### 3.2.1 Key Concepts

#### *Transport Deprivation*<sup>18</sup>

The following modes of transport arranged according to the most to the least environment friendly are: (1) travel by foot (2) pedal powered non-motorized transport (NMT) (3) public transportation (PT) and (4) private motor vehicles (PMV). Walking as a mode of transport is people moving on foot and using their bodies as a mode of transport. "Pedestrians" include people standing, people sitting at benches at tables, individual walkers, walkers in groups, walkers with children, children playing, joggers and runners, people with handcarts, and vendors with carts. These very different people have varying actual needs, abilities, impacts and economic value to the city. Pedal powered non-motorized transport includes bicycles for carrying loads and goods, and bicycles with sidecars large enough to

transport two or three passengers within a short distance (locally known as pedicabs or *trisikad*). These non-motorized modes are also considered intermediate modes of transport (IMT), which are the most vulnerable to crashes yet are the most environment friendly form of transport, next to walking; thereby considerations of equity and environment are built in when discussing such non-motorized modes. The third mode of transport is public transportation<sup>19</sup> (also called public transit or mass transit), including various types of services and vehicles. As the concept of public transport has very specific meanings in different contexts, PT in this research will broadly mean transport services for a fee made available to the general public, whether public or private. Private motor vehicles (PMV) refer to motorized transport such as motorcycles, cars, jeeps, trucks and other motor vehicles which are owned, used for personal and/or family use and not for hire.

The research accepts that poverty in high-income countries as discussed extensively in the literature is very different from poverty in low and middle-income countries. With these assumptions about poverty in mind, transport deprivation as a concept may be a useful starting point for the research, mainly because of the substantively different conditions of infrastructure and accessibility in low-income countries. Poverty may be associated with mobility impairment and transport deprivation may be associated with accessibility impairment (Vasconcellos 2003). Time-inefficiency and high cost make people deprived next to mobility impairment and accessibility impairment: they do use transport (bicycle or by foot) but it takes a lot of time. If they use a vehicle, it costs more than 20% of income. Therefore, transport deprivation can be unpacked into categories related to non-vehicle time intensive; vehicle-time-intensive; vehicle-high-cost; and low accessibility, low mobility.

Transport deprivation is captured from the point of view of the user. The following guidelines to capture transport deprivation will be used<sup>20</sup>:

- Distance from place of work is more than 5 kilometers.
- time of travel to place of work is more than 1 hour;
- transport cost is more than 20 percent of income;
- number of daily trip legs to work is more than 3.

Choice of the above figures (i.e., 5 kilometers, 1 hour, 20 percent of income and more than 3 trips) was based on measures related to quality



of life in cities (UN Habitat, 2016:34). For example, a single “trip” is defined as any movement out of a location for longer than 10 minutes total time.

### *Gender and Gender Relations*

Gender relations refer to hierarchical relations of power between women and men that disadvantage women. These gendered hierarchies can be seen in gendered practices, such as the division of labor and resources, and gendered ideologies that produce gender identities and gendered norms and expectations of social behavior of women and men. The gender division of labor in ideas and practices define what roles and activities are deemed proper for women and men. The social construction of gender division of labor such as ideas, beliefs and practices shall be seen in context-specific patterns of genders and how each is valued. These include separation of spaces, cooperation in joint activities, conflict, negotiation, and other forms of relations between men and women (Beebejaun 2016, Güney 2014, Metropolis and WICI 2018).

The use of the concept gender will focus on two levels: (a) the connectedness of men’s and women’s lives, and the imbalances of power embedded in male-female relations; (b) the tacit and often unconscious influence of specific gender norms in knowledge of everyday life on transport and mobility and in institutional or ‘expert’ knowledge that informs policy making, and how they relate to women’s transportation needs and desires.

Guidelines on gender differences in transport deprivation would include:

- time use and time poverty: how much time men and women allocate for travel— where they go, for how long, and for what purpose, and the scheduling of trips and trip legs they make; Gender differences in the proportion of travel trips for other than paid income trips;
- access to resources for travel: whether men and women use authorized or unauthorized modes of transport and the reasons they use these modes of travel; and
- expressed views on their travel experiences – comfort, physical security, personal safety, time.

### *Gender Equity*

Generally, the notion of equity implies a need for fairness in the distribution of gains and losses and the entitlement of everyone to an acceptable

quality and standard of living (Beider 2006). As women's interests and gender needs are the focus for this research, the study utilizes the concept of gender equity. Gender equity will refer to the equivalence in life outcomes for women and men, recognizing their different needs and interests, and requiring a redistribution of power and resources (SIDA 2016).

The goal of gender equity, also referred to as substantive equality (CEDAW, 1981), is transformative or changing gender relations towards achieving more equivalence outcomes. Gender equity goals are thus political than the seemingly neutral gender equality, and therefore it is not surprising that gender equity is generally less accepted in many planning and policy documents.

Gender equity recognizes that women and men have different needs, preferences, and interests. Only through different treatment of men and women in all the diversities of the genders can there be equality of outcomes.

The first step to initiate a rethinking process for policies and programs is the need to understand men's and women's realities by gathering basic data on gender differences in transport. Thus, guidelines for gender differences in transport would include:

- How much benefits or disbenefits experienced by different groups of men and women
- Evidence which considers contexts of men and women and other factors, such as geographical location and income levels, which disaggregates transport experiences according to gender
- Quality of Participation in spaces for inputs on policies, programs and decision making (community and city levels)

### 3.2.2 Institutional Approach to Data Analysis

The research proceeds from the assumption that people cannot be separated from the social arrangements in which they live. It seeks to capture the notion of transport deprivation at different levels of abstraction, including the following:

1. The reality of people in the city,
2. The institutions and social environment or context through which transport deprivation can be situated.

3. The actors that contribute to the shaping of forms of transport deprivation or its reduction (i.e., the different interest groups, policy makers, ordinary citizens in the city, etc.), and their interactions within the social context of the city. These interactions are mediated through the specific institutional context and can have unexpected outcomes regarding the wellbeing of disadvantaged groups.

By delineating the three levels and working on all of them, it is possible to assess the functioning of institutions according to a co-constructed vision of a transport system that meets the goals of gender and social equity (Litman 2013c). This shall mean simultaneously working on all levels, rather than focusing on one and assuming that its effects will ripple to other levels.

**Table 3**  
*Research Objectives, Questions and Data Gathering Method*

Research Objectives	Concrete Questions	Data Gathering Methods
To analyze experiences of transport users using a gender lens	What are the transport conditions of men and women in various locations in the city?	<ul style="list-style-type: none"> <li>• Random Sample</li> <li>• Survey (quantitative and qualitative)</li> <li>• Sub Sample Interviews (qualitative)</li> <li>• Focus Group</li> <li>• Discussions (qualitative)</li> <li>• Observation (qualitative)</li> </ul>
To explore the interface between transport planning and gender to surface how transport policy understands, misunderstands, or ignores the transportation needs of men and women in the city	What are the gender assumptions of the current transport policies and plans? Are women’s organizations involved in transportation decision making on community, city, and national levels? Why or why not?	<ul style="list-style-type: none"> <li>• Secondary Data (qualitative policy reports and quantitative)</li> <li>• Key Informant Interviews (qualitative)</li> <li>• Focus Group Discussions</li> </ul>
To argue for a new approach to gender in transport studies	What is the main value-added insights of a multidimensional concept on gender to current thinking on women, development and transport?	<ul style="list-style-type: none"> <li>• Random Sample Survey (quantitative and qualitative)</li> <li>• Sub Sample Interviews (qualitative)</li> <li>• Focus Group</li> <li>• Discussions (qualitative)</li> <li>• Key Informant Interviews (qualitative)</li> </ul>

### 3.2.3 Linking Objectives, Research Questions and Methodology

Table 3 shows how the research objectives are concretized in questions, which in turn became the basis for developing tools according to the identified data gathering method. Data gathering methods were mostly qualitative; only random sample survey was used to generate quantitative data on people's experiences and perceptions of the Davao City transport system.

## 3.3 Data Gathering Methods

Various data gathering methods will be used to provide a distinct basis and character to the research. A random sample survey method is used alongside qualitative methods such as a subsample and focus group discussions which use a “messier process producing fuzzier results” (Darier and Schle 1999). Careful text analysis is carried out to provide a whole picture. A distinctive feature of the research process in the complementation of using various methods is the intention to capture pluralities of the representation of reality. This research purposely shifts away from the traditional sole reliance on only one data gathering method. The mix of both quantitative and qualitative approaches provided a richness, depth, and sensitivity to contexts, in turn enabling more insightful analysis of transport justice and gender.

### 3.3.1 Secondary Data

The first stage of the research is to establish the parameters of the study and is essentially qualitative in nature. The major component of this stage is an extensive literature review from countries of various incomes, which identifies the main parameters of the gender and transport frame. This also includes a review of transport initiatives designed specifically to address issues of women in low- and middle-income countries, specifically in Asia, and more particularly, in the Philippines.

Secondary literature with cross-country information about transport safety and security is analyzed to see a whole picture. This means focusing on an analysis which highlights issues of misrepresentation as well as invisibility that is crucial in a transport justice frame. Statistics from various global, national, and local literature is also included.

A review of official local unpublished and published reports and documents followed, specifically sections related to transport.

### Text Analysis

Various documents and data about Davao city transport practices and transport policy were analyzed by deconstructing the meanings of gender in policy as well as in transport templates.

**Table 4**  
*Respondents of the Random Sample Survey*

District	Workplace Setting	Name	No. of respondents
District 1	Open market	Bankerohan Market	40
	Public sector	Davao City Hall	40
	Private sector	Davao Doctors Hospital	40
District 2	Open market	Agdao Market	40
	Public school	Buhangin Elementary School	20
	Public school	Bernardo High School	20
	Private sector	San Miguel Foods, Inc.	40
District 3	Open market	Mintal Market	40
	Public school	Don Juan Elementary School	20
	Public school	Doña Carmen High School	20
	Private sector	Nenita Farms	20
	Private sector	Magnolia Plant	20
Total Respondents			360

### 3.3.2 Primary Data

#### *Random Sample Survey*

A survey was done to obtain responses from a random sample that could be coded with variable labels and statistically analyzed. The study sought to capture a sample of women in Davao City who are members of the local labor force of paid work. Official documents<sup>21</sup> report that female labor participation rate in Davao City is one of the highest in the country which could be a result of substantial opportunities in the city for women.

The random sample survey (RSS) was done to explore the transport conditions of different groups of men and women in the city (Table 4).

**Table 5**  
*Respondents of the Subsample*

Dis- trict	Names	Workplace	Age	Arrival in City	Household Situation	Civil Status	Education
1	Ju- lienine	DDH	24 y	1984 from Oza- miz	brother/sister	single	college
3	Bebet	Mintal	36 y	1992 from Laac	Extended; hus- band in prison	married	HS
1	Judet	SP	30 y	1978 since birth	Nuclear; 6/2 yr olds	solo parent	college
3	Rosario	Nenita	49 y	1977 from Bo- hol	Nuclear; 21/23/25 yr olds	sepa- rated	college
3	Monday	Dona C Carmen	59 y	1975 from An- tique	Extended; with grandchildren	married	MA
1	Delsa	Bankerohan	60 y	1948 since birth	Nuclear; 15/20/22 yr olds	married	HS
1	Mary Ann	Bankerohan	20 y	No data	working stu- dent	single	in college
2	Marlyn	DDH	45 y	1964 since birth	Nuclear; 14/21 yr old with dis- abled child	married	college

### *Subsample*

A subsample of eight women was chosen from the RSS respondents. Focusing on women's lives and views provided space for qualitative information which is not captured in the more stringent data gathering method of a survey.

The semi-structured interviews in the subsample attempted to capture mini biographies which, in the words of C.W. Mills (1959), can be translated into "groups" of people in specific historical contexts, namely, their

families, their households, and communities. It sought to see such contexts as important to balance the static limitation of a random sample survey by highlighting the important variety of backdrops of women in the city. The subsample also intended to capture the views of women about changes during the years they have traveled within the city. In doing so, the research confirms their non-invisibility and they are the subject as people who should be at the center of development. More details about their needs, how transportation affects their lives are expressed here. This is significant to address their reduction as mere users or beneficiaries of transport.

Other criteria for the selection of subsample interviews included factors such as the women's ability to articulate their views or to register observations of changes in the city landscape of transport vis-à-vis their own personal lives given the number of years they have lived in the city.

While the interviews of the RSS were done in the workplaces of the respondents, interviews of the subsample took place in the respondent's homes during the first quarter of 2009. Each face-to-face interview for the subsample took at least an hour and not more than two hours.

The research protocol/field guide (appendix 2) for the subsample covered their travel diaries during weekends, the changes they observed in their life in the city. Probing was done on their positive and negative experiences with regards to mobility and accessibility in the city. The subsample sought to capture realities such as the division of responsibilities as well as access to and control of resources within the household. The face to face one on one interview probed on decision-making processes related to transport expenses and resources. In addition, it documented the experiences and views of women with regard to transport programs and projects of their immediate community or the city. The subsample guide also attempted to draw from the women how they could relate their experiences within the system of transportation in the city.

#### *Focus Group Discussions*

FGDs were done to obtain a richer picture to complement the usual tables and figures of a survey. FGDs sought to capture how providers, participants, and various stakeholders of the urban transport arena in Davao City "name" transport-related issues, delving deeper than the surface. The FGD allowed transport participants to reflect on what needs to be

changed and how such changes can take place. Issues of their participation in change making were also tackled in the FGDs.

FGDs were held in March 2008 with the following groups: (1) feminist leaders and representatives of youth and community-based organizations; (2) the transportation sector in Davao City, i.e. heads of jeepney associations, tricycle driver and operators, and public transport providers associations of the city; (3) the public sector including teachers, employees of Davao city hall, and elected officials from local communities; and (4) representatives from NGOs, development organizations, and professionals from the private sector. A screening guide was used to map out variables as criteria for the participants to be invited to the FGDs. A field guide was used to systematize the flow of the discussion of the FGD as data gathering method. The FGDs were held at the University of the Philippines Mindanao located in central Davao City.

#### ***Key Informant Interviews***

A total of thirteen Davao City officials and national policy makers were interviewed.<sup>22</sup> Among the key informants who were interviewed in Davao City were: (1) elected Representatives of the City Council who lead the Committee on Environment and Natural Resources and the Committee on Women, Children and Family Relations; (2) officers of the Traffic Control Management Committee and the Chief Technical Assistant of the City Administrator's Office; (4) the Chief of the Engineering Department; (5) the Officer in Charge of the Gender and Development Office; and (6) the Director of the City Planning and Development Office.

In Metro Manila, the key informants interviewed in 2008 were (1) the Director of the National Center for Transportation Studies; (2) the Deputy Director of the National Commission on the Role of Philippine Women (now the Philippine Commission on Women); and (3) an official from the Transportation Studies Society of the Philippines.

To update the information from the interviews, additional key informant interviews were conducted in January 2015 to update information earlier gathered. Three key informants were the City Administrator, a City Planning and Development Officer and for a second round, the head of the Gender and Development office. Interviews were held in their office at Davao City Hall.

It is necessary to disclose that I have been working with the feminist movement and the sustainable transport movement for more than two



decades. I have personally witnessed the processes and struggles of advocate leaders of the collective forces of these social movements; thus, I have developed a personal knowledge of the range of issues. These experiences pose both advantages and limitations on the study. On the one hand, it might have influenced the tenor of the data gathered as well as the data interpretation. Further, my identification as a feminist advocate informs and constitutes my theoretical foundations.

On the other hand, my personal relationship with the key figures in the transport sector enabled me to have direct access to them and to official documents from the government. However, I still ensured crosschecking for validity and integrity of the data. Lastly, my personal knowledge of the issues allowed me to better contextualize data in the appropriate milieu.

#### *Police and Hospital Records*

Accident files from the Davao city police were studied. Medical records and emergency room logbooks of one major hospital located in the city center were culled and summarized.

**Figure 7**  
*Using Medical Records at the Davao Doctors Hospital*



Raw data from the hospital emergency room and the city police data files were first systematized and then analyzed from a transport justice perspective. In the light of the view of social policy on safety and security of the body, a close review of accident data was done through looking into the standards of assessment of the causes cited in various texts.

### 3.4 Sampling

Systematic random sampling was used for the random sample survey. A list of employees was taken from the management of each workplace and a table of random numbers was used. A pre-coded instrument was pre-tested by three trained local interviewers, a female and two males, who together with the author/lead researcher, comprised the “field team.” The interview proper for the random sample survey was conducted by the local interviewers and myself. I was with the local team in conducting the interviews, specifically of hospital employees and public-school teachers as these group of respondents could speak Tagalog and English. The local team members interviewed the market vendors, factory workers and office employees.

The decision to choose a sample in identified workplaces is a recognized limitation of the study: that those working in the informal sector prevalent in the low and middle-income countries are not reflected in the study. Given the limitations of time and resources, I made a conscious decision to cover field areas in a space where it was more manageable to cover respondents who were more available and accessible.

The subsample of eight was purposively done from the 360 random samples. The criteria used for the selection of in-depth interviews were a configuration of the variables of location, age, schooling experience, and civil status, nature of household, arrival in Davao City, experience in community leadership and level of articulation of experiences.

The field research team met each week to exchange observations and preliminary insights from interviews during the RSS phase. The field research team decided on the respondent women for the subsequent subsample based on a continuing collective exchange about who could best express experiences and views reflective of various contexts. By contexts we were thinking beyond variables of social location such as their respective income category, civil status, phase in their life cycle, or whether they were the household head or not.

### 3.4.1 Groupings by Income, Gender, and Location

The 360 respondents chosen randomly for the survey are classified in terms of income, gender, and location. Respondents were assigned to income groups (low and high income) on the basis of per capita income, measured in 2008. The data on per capita income was derived from self-reports of daily, weekly, or monthly household income from the survey. The poverty threshold of Davao City was used as demarcation line between the two categories of income groups used in the study. In 2008, the daily minimum wage in Davao City is 250 pesos, while the poverty threshold of the region is 8,000 pesos per month for a family of five. All respondents whose income is below the poverty threshold of 8,000 pesos are categorized as coming from a “lower income” group while those who earn 8,000 pesos and above comprise the “higher income” group.

The study recognizes that the results should be interpreted with care. In the case of market stall owners for example, income figures represent gross earnings, not yet deducting the expenses on consumer goods and transport. There is no such thing as a fixed salary income for market stall owners who state their income in terms of profits per day, week or month. Despite this, some market stall owners clearly generate significant gross income.

As for the groupings by gender, standard labels of male and female are used. I recognize that there is much debate and resistance to the use of these binary categories in the available progressive literature. The study registers the limitation of utilizing these binaries, and later sections critically examine the assumptions which accompany them.

The sample is almost equally comprised of lower income (with incomes below official poverty threshold) and higher income (within and above poverty threshold incomes) between genders (females and males).

### 3.4.2 Data Management, Processing, and Analysis

The results of the pre-coded random sample instrument were processed and analyzed using SPSS 17. Intersectionality or the ways in which gender intersects with other dimensions of social differences (class, ethnicity, age, geographical location, etc.) to shape dynamics of dis/privileges in society, guided the process of discourse analysis of transport policy and practice. Specifically, the study considered the intersections of gender, geographic

location, socio-economic class of transport users within a social environment of transport provision.

### 3.5 Feminist Methodology

#### 3.5.1 The Research Process and Ethical Considerations

Several feminists have brought to attention how many researches lack a gender perspective. On the other hand, some researchers (Austin, 2009; Riley, 1999; Risman, 2009.) explicitly state that their research are not about gender issues at all. Maybe they do so as a tactical route, believing that saying issues are not gender related might be better assurance for policy recommendations to have traction.

This research takes a stand that being gender blind (insisting that there is no difference for men and women) or gender neutral (pretending that women and men similarly and equally benefit from the current transportation system) hinders emancipatory ideas and practices. I consciously take a feminist perspective on how to conduct this research—with its participants, not for or on them. Dialogue, critical reflection and a search for ways for transformative change is embedded in its methodology.

As a feminist researcher, I am sensitive of my various intersecting selves as an academic, an activist and policy expert. However, I am also aware that in doing this research, I realize that my academic self should be the dominant voice because I am engaging with a body of very complex knowledge with the intention of addressing an academic audience. I am not writing a report as a consultant nor leading a revolution.

My involvement in the research process have taken diverse roles such as being a feminist scientist with an expert role, a facilitator of knowledge sharing processes, and my own personal internal reflection role. Many conflicts and dilemmas have surfaced. I believe it is not necessary to resolve these conflicts and dilemmas which I have experienced. Being conscious of how these affect the analytical processes for my research is more crucial. As an engaged scholar, I want to articulate the voice of the research participants, contribute to fresh knowledge through my work, and hopefully, this will lead to critical and substantive exchange in the scientific community.

## Notes

<sup>15</sup> Portions of this chapter are from previously published work (Rivera 2008, Rivera 2010).

<sup>16</sup> The author was involved as a member of the Philippine research team in a four-country study of The World Bank on Urban Poverty led by Dr. Caroline Moser. The research design of my study was inspired by my intense involvement in this collaborative research as well as by the rigorous training and discussions during the preliminary and post research fieldwork proper workshops held at Washington DC. See Moser, Gatehouse, & Garcia, Urban Poverty Research Sourcebook Module 1: Indicators of Urban Poverty, 1996.

<sup>17</sup> For instance, the bombing of the Davao City international airport in early 2003, high profile kidnappings, and the conflict situation related to Muslim separatist movements. International development agencies and donor organizations have been supporting projects in the island to fuel economic activity to “stabilize” the situation.

<sup>18</sup> For definition of Transport Justice, see Chapter 1, Figure 1.

<sup>19</sup> In industrialized countries, public transport connotes the idea of subsidized transport for wide use by the 'public' or common people. It is a form of shared passenger transportation service available for use by the general public. Today in low and middle income countries, it is increasingly privatized. In most case, the term mass transport may be more appropriate since it simply means transport for the masses or the ordinary commuters, which can be either subsidized or include private operations. Glover (2011) discusses the debates on public transport as common pool of resources

<sup>20</sup> I distinguish between trips and trip legs. A trip is from origin to destination, while trip leg is a part of a trip that is made with a different transport mode or interrupted by a short activity.

<sup>21</sup> Office of the City Planning and Development Coordinator, Socio-Economic Indictors: Davao City

<sup>22</sup> Jose Gestuveo, Head, City Engineer's Office, Davao City; Angela Librado-Trinidad, City Councilor, Chair of Committee on Women, Children and Family Relations, Davao City ; Leonardo R. Avila III, City Councilor, Chair of Committee on Environment and Natural Resources, Davao City ; Alfredo A. Pontillo, Chief Technical Assistant, City Administrator's Office; Mario Luis Jacinto, City Planning and Development Coordinator; Cesar Gempesaw, Secretary, Traffic Management and Control Board, Davao City ; George Esguerra, Transport Engineer, Private Sector, Metromanila; Loren Umali, National Commission on the Role of Filipino Women, Manila; Lorna Mandin, Officer in charge, Integrated

Gender and Development Office, Davao City ; Regin Regidor, Dr. Engineer; Director National Center for Transportation Studies – University of the Philippines, Quezon City; Head, City Engineer’s Office, Davao City; Assistant Planning and Development Officer, Davao City

# 4

## Redistribution and Representation of Access to Transport

### 4.1 Introduction

This chapter<sup>23</sup> provides data and analysis of the gendered character of transportation in Davao City, as contextualized in the city's geography and demographic profile, as well as transportation policy frameworks at the national and local levels influencing the people's movement, women in particular. As the chapter shows, transport planning literature and policies in the country is focused on infrastructural development – zoning, road construction, and traffic management. People's experiences are largely invisible, if considered at all, while the diverse stakeholders in transport are generally gender blind.

The last two sections of this chapter present people's transport experiences by way of describing the various transport modes in Davao City, as well as the profile of transport users according to groupings of income, and gender. Primary data was gathered through a survey, and in-depth interviews from the survey sub-sample. The main purpose of the chapter is to communicate new, original local knowledge and analyze these along the lines of gender. The intention is to point out how gendered knowledge on transport is critical to addressing women's transport access issues and their exclusion from transport planning

### 4.2 Context of the Study: Davao City

Davao City was chosen as the site of study because it is one of the most important cities in the Philippines. It is considered the primary city in the island of Mindanao, and the only one categorized as a highly urbanized city<sup>24</sup> in Region XI. It is the largest city in the Philippines in terms of land area. In recent years, the sprawling urban metropolis has emerged as the business, investment, and tourism hub for southern Philippines.

Global attention has focused on Mindanao during the past years due to the peace and order situation, i.e., the bombing of the Davao City international airport in early 2003, high profile kidnappings, and the conflict situation related to Muslim separatist movements. International development agencies and donor organizations have been supporting projects in the island to fuel economic activity to “stabilize” the situation.

In the island of Mindanao, Davao City occupies an area of 2,444 square kilometers. Its size is almost four times that of Metro Manila in Luzon, and more than twice that of Metro Cebu in the Visayas. According to the 2015 census population, its population of 1.663 million ranks Davao city as the fourth largest city in the country. Between 2000-2015, the average annual population growth rate in the city was 2.3 percent, which is high relative to 1.74 percent population growth rate of the region, and 1.72 percent at the national level. Mindanao has 41 percent poor families against the national average of 28.4 per cent. In terms of income poverty, the threshold for the region is 8,000 pesos monthly income. Among the cities and municipalities in Davao Region, Davao City is the least poor. Within the city, nearly one third of population is comprised of income poor families. Davao City is also the only city categorized as “highly urbanized” in the Region.

The population in Davao City is generally young, with a 1:1 gender ratio (NSO 2013). Data on the age distribution show that the median age is 24 years old, meaning half of the population in the city is below this age. Females outnumber males in the age brackets of 15-29 years old, and 45 years old and over; the opposite is true in the age brackets of 0-14, and 30-44 years old.

The strength of the women’s movement in Davao is evident not only with the presence of very active women’s organizations compared with other Philippine cities, but also the fact that many women activists now occupy high profile elected public offices and other leadership positions with public decision-making powers. This is likewise evident in the passage of the landmark legislation Women Development Code of 1997, the forerunner of other local government units’ gender policies as the Davao experience served as the role model to be replicated in the Philippine local governance landscape.<sup>25</sup>



**Figure 7**  
 Location of Davao City, Mindanao Island, Philippines



Davao is a linear city<sup>26</sup> evolving from an urban sprawl type of growth based on low-rise development. The overall densities of the large tracts of land are kept relatively low. Built up areas used for residential, institutional, commercial, and industrial areas currently represent 15.3 per cent of the

total land area or 36,916.74 hectares. The city government proposes to increase this to more than 50 per cent until the year 2020. Land use for agriculture is 67.19 per cent, reflecting the role of agriculture as the city's largest economic sector with major crops such as bananas and other fruits, corn, vegetables, coffee, grains, and cacao.

The city is conducive to business as evidenced by the presence of the country's top 200 companies in the area. Trade officials in the country stressed the distinctive standpoint and huge potentials of industries in Mindanao, and how Davao City is in a special position to provide a solid support system. These opportunities in Mindanao are such that government agencies are tasked to work together and put priority on agriculture, agro-industrial food processing, manufacturing, and tourism. Mindanao, being the country's second-biggest island, accounting for 34 per cent of the Philippines' total land area, was on top of the list of investment opportunities given incentives by the Board of Investments (BOI). Among the lucrative industries entitled to tax perks include the export of global favorite tropical fruits like coconut, mangosteen, banana, pineapple, and papaya – fruits all grown in Davao City.

Given the thrust on expanding the huge business potentials of the city, the policy towards urban poor residents and other informal settlements in the city center is eviction and resettlement. Resettlement areas or the urban poor can be found in areas of more than 10 kilometers from their original inner-city areas. In 2006, 100 million pesos were added to the 1995 allocation of 80 million for housing in support of land banking for socialized<sup>27</sup> housing. In 2007, the city government reported that more than 2,905,092 square meters of housing services were provided through various facilities such as the Slum Improvement and Resettlement, Relocation Areas, Private Relocation assisted by the City, Urban Land Reform Program and other City Assisted projects. The Comprehensive Urban Shelter and Services Development Code of Davao City or the Shelter Code was also passed in 2008 by the City Council. In 2017, Davao City has the largest agricultural land converted into industrial-commercial area in the region (Philippines Statistics Authority-Davao 2017), where 34 percent of these space conversions are residential areas i.e., subdivisions and condominiums. In compliance with the Urban Development and Housing Act of 1992, all commercial real estate developers are required to develop an area for socialized housing.

The positive business environment as projected by the government, however, deserves a closer look. To contrast the economic progress of the city and the position of low-income families in the city is part of a necessary demystification process. This will entail looking more carefully at the framework to improve the living conditions of the poor, encourage their participation in the crafting and execution of local government policies, particularly regarding transport. Per 2015 census, national poverty incidence stood at 21.9 percent, while that of the Davao Region was slightly higher at 22 percent.

### 4.3 Transport Policies and Decision-Makers

Transport policies in the country are informed by national level plans and guidelines on the other hand, and the local government (e.g., Davao City) specific priorities and approaches regarding transport sector issues. This is possible because of the policy of decentralization (as provided in Republic Act 7160, or the Local Government Code), which gives a greater leeway to local government units (LGUs) to set development plans and programs in their jurisdictions, including those concerning infrastructure and transportation. Prior to the decentralization, transport policies and planning are with the national government. To date, the function of the two national government agencies directly involved in transportation, the Department of Transportation (DOTr) and the Department of Public Works and Highways (DPWH), largely revolves around policy formulation, services regulation, and international cooperation. The DPWH is also responsible for the planning, designing, construction and maintenance of national roads, bridges, and major flood control systems.

References to national level transport policy and program directions also include the Philippine Development Plan 2011-2016, which states the country's vision for "a safe, secure, efficient, viable, competitive, dependable, integrated, environmentally sustainable, and people-oriented Philippine transportation system" (NEDA 2011: 127). The policy document also encouraged the use of renewable energy to power vehicles, improvement of systems and facilities for non-motorized transport, and compliance to international safety and security standards. It further stated that transportation systems and design should consider the specific needs of people such as the frail, elderly and differently abled, among others (ibid.).

### 4.3.1 Transport Planning in Davao City

The local policy directions of Davao City, as articulated in its development plans, run parallel to that of the national government. The Comprehensive Development Plan (CDP) of the LGU, for instance, is explicit about the concept of equity in development and building systems and infrastructure oriented to addressing the needs of the people, especially the marginalized. To wit:

These plans/programs are also in consonance with the desire of the City government to establish social equity and accessibility giving preferential attention to the depressed areas.... This can be accomplished by equitably distributing infrastructure, economic activities, opportunities, and basic services throughout the city.

The extent to which these are manifested in transport policies, systems and facilities in the City is debatable. For one, the notion of equity implies a need for fairness in the distribution of gains and losses and the entitlement of everyone to an acceptable quality and standard of living. Yet intra-city land transport policy and planning in Davao City is very infrastructure and vehicle-oriented, instead of people-oriented. The Asian Development Bank (2013), for instance, observed that there seemed to be a focus on road network widening as a solution to its “perceived” traffic congestion issues. Its sights are set on transforming Davao towards a direction of a Metropolitan city, parallel to Metro Manila, even as its transport policies and strategies of the city are “weak” as they are couched in broad terms, lacking details regarding content, financing, and timeframes. There is also no coherent framework weaving through the various transport-related policies, including those covering land use, infrastructure development, and regulation of transport modes.

A discussion of the socio-cultural dimensions of transport however is missing from official documents, or even mention of people as transport users and their issues. There is no information about actual problems of safety and security of people in the city. Despite the professed public concern for road safety and the dismal record of motor vehicle accidents and physical injuries caused, these data do not find its way into transport planning documents of the city gathered and examined for this study. This disconnect between the reality of the streets and the plans being cobbled together for the city’s transport does not bode well for the welfare of the

city's commuting publics. Furthermore, this problem is not limited to Davao City as it is also absent as in national policy deliberations on transport.

The official transport policy actors in Davao City include elected officials (e.g., city council heads of transportation committees), public sector officers (the Planning offices of the City Hall, Office of the City Engineer, Transport Management Coordinating Board).<sup>28</sup> These institutions of the city base their prescriptions on implicit norms that are linked to stated goals in the official documents or unstated goals in their everyday practices. As previously mentioned, planning documents begin with explicit statements of several norms that form the rationale and related goals of transport practice. These norms in the stated goals in official documents reflect specific values. Explicit in official policy, the norm of equity stresses the importance of equal access of all people to various opportunities, work, social services, health services, schools, and educational centers. However, the norm of technical efficiency is often invoked by official transport actors when queried about their practice:

It should be a top to bottom approach (experts should participate because they are the ones who know the issue) and bottom-top (the grassroots need to be consulted since they will be affected of any change). The experts concern is on transport engineering, more on geometry, measurements, type of roads, safety, and technical side of transport infrastructure. It is more people friendly now. There is what we call as transport mathematics, concerned on measuring distances, angles, etc.

The above quote from the Davao City Engineer<sup>29</sup> points out that the norm of efficiency is associated with standards coached in language official transport policy actors understand best because it would be "too technical" to discuss with non-official transport policy actors. Thus, the discourse on and practice of transportation policy, planning and implementation is predominantly technological in orientation thus, exclusive to "experts" who are mostly male.<sup>30</sup>

This highlights another dimension of transport planning in the city: it is gender-blind. The focus on infrastructure and motorized vehicles at the expense of pedestrians also has gendered implications because it is the women who are more frequently public transport users and pedestrians.

First is that although the city has been lauded as one of the first major city in the country to have enacted its Women Development Code, which

includes gender mainstreaming in development programming, it has limited application beyond gender-disaggregation of demographic and socio-economic data, and traditional areas of concern such as health, crimes (e.g., violence against women), and family welfare. In other fields than those traditionally associated with women's activities, such as health care and childcare, gender is clearly absent as a factor in planning. This is evidenced by the silence of the Comprehensive Development Plan (CDP) on gender and gender equality goals in the light of transport planning, even as it forwards social equity as an overarching framework.

Second, the interviews and focus group discussions with key stakeholders also reveal the gaps in the appreciation of gender mainstreaming in transport, as well as the importance of increasing women's participation in formal decision-making bodies on such. Even among community members (women leaders, small-scale transport providers, representatives of local organizations), clear articulation of transport issues from a gendered perspective is uneven or lacking. The concerns raised and recommendations in focus group discussions with stakeholders were generally gender-blind i.e., presented as affected both women and men similarly and equally; socio-economic class-related issues (e.g., limited access of low-income households) and road safety for children were more likely to be linked by stakeholders to transport. Women's groups, however, identified more nuanced issues such as limited public transport during late hours, which has implications on female night workers' security, and the lack of women's representation and participation in transportation planning. (See Table 6).

While transport is central to people's actual life circumstances, top-down decision making based on a 'generic' definition of 'transport', 'affordability' and 'safety' comes into conflict with daily life experiences of users. Transport policy and planning documents in Davao city have not utilized any data about people's experiences with the city's transport system, much less viewed these from gendered lenses. Women's situation is invisible and has not been brought to the negotiating table.

**Table 6**  
*Issues, concerns & recommendations raised during Focus Group Discussions*

FGD Participants	Expressed Transport Concern / Issue	Point Put Forward / Recommendation
Women Leaders	<ul style="list-style-type: none"> <li>▪ Very unsafe public transport modes</li> <li>▪ Very uncomfortable public transport modes</li> <li>▪ Absence of safe facilities for pedestrians</li> <li>▪ Many parts of the city have insufficient public transport</li> <li>▪ Time of operation of safe public transport is usually only until 10 pm when many women are employed in 24-hour establishments</li> <li>▪ Non-representation and no power in community decision making body on infrastructure, specifically (1) Budget priorities and expenditure decisions (2) Location of infrastructures, i.e., transport facilities</li> <li>▪ No regular institutional mechanism for women, especially mothers, to communicate, participate and negotiate on transport related concerns</li> </ul>	<ul style="list-style-type: none"> <li>▪ Put in place a genuine institutional mechanism to channel, register/ follow up, monitor inputs into transport policies and plans by transport users and providers</li> </ul>
Small-scale authorized transport provider	<ul style="list-style-type: none"> <li>▪ Do not believe that development in Davao City means expensive transport like private cars and building big structures</li> <li>▪ Total disregard of public service value of authorized and unauthorized transport providers to the ordinary citizens of the city</li> <li>▪ Disregard for transport as small business with important economic contribution to the city's wealth</li> <li>▪ Absence of a forum to register and negotiate fairly related to transport situation related dilemmas such as public transport terminal space is owned by private businesses</li> <li>▪ Legitimacy of transport on one hand and provision of service according to area should not compete against each other</li> <li>▪ Fear that tricycles will be taken off the streets</li> </ul>	<ul style="list-style-type: none"> <li>▪ Thorough Situationer of all the forms of public transport providers</li> <li>▪ Location of transport terminals</li> <li>▪ Systematically mapping out territories of various transport modes</li> <li>▪ Genuine participatory and functional mechanisms for various operators of both authorized and unauthorized public transport modes to input into the city's transport policies and plans</li> </ul>



FGD Participants	Expressed Transport Concern / Issue	Point Put Forward / Recommendation
The private sector and citizens organizations	<ul style="list-style-type: none"> <li>▪ Transport modes used by the poor are invisible and not a priority in city transport policy.</li> <li>▪ Unsafe transport modes in many parts of the city used by young children on major roads</li> <li>▪ Efficient Infrastructure program to address flooding in the city and unreliable transport options during floods</li> <li>▪ Transport is only about road building and use of cement and more cement. Absence of mothers with their children going to school, mothers with young children in difficult transport situations</li> <li>▪ No sidewalks for walking</li> </ul>	<ul style="list-style-type: none"> <li>▪ Mechanism to assure safe transport for all, especially the poor. Local government units (LGUs) must facilitate the engagement between transport providers and users, i.e., fare conflicts</li> </ul>

#### 4.4 Transport Provision in the City

Like many cities in the Asia-Pacific region, the variety of transport in Davao City reflects the ingenuity of its residents. The concept of “multimodality” captures the reality at Davao City. Multimodality suggests transportation infrastructures and practices that embody social diversity. Through negotiations over urban transportation, the concept of multimodality examines the predicament of living amidst social diversity in a shared built environment. This conceptual shift is coincident with the rise of multiculturalism in public debates and with the growing importance of biodiversity in environmental arenas. (Patton 2007)

Multimodality reflects Davao transport modes. There are more than a dozen intra-city land transport modes found in several legal and “illegal” sites serving as terminals. This study chooses to consider the modes of transport in Davao city in terms of “authorized” or “non-authorized” public transport modes. The various modes of transport used by its citizens may be categorized into five types as outlined in Table 7 below.

Modes of transportation within the city include public utility jeepneys (PUJ), autocalesa<sup>31</sup> (AC) and air-conditioned taxis. There are also small, reconditioned Japanese vans popularly called by the city people as “multi-cab”. “*Usò Usò*” is another type of unauthorized jeepneys. The name is coined from the word “*usò*”, which means “trendy”. It is a jeepney rigged



with an engine of a small truck, making it more powerful and faster than a regular jeepney.

**Table 7**  
*Modes of Transport in Davao City*

• Walking	
• Pedal-powered, non-motorized transport	bicycle, <i>pedicabs</i>
• Unauthorized Public Transport	<i>habal habal, payong payong, trisiboat, uso-uso</i>
• Authorized Public Transport	tricycle, <i>trisikad</i> , jeepney, multicab, bus, taxi
• Private Motorized Transport	motorcycle, jeep, car

There are also various types of tricycles, such as the (1) standard type where the motorcycle is attached on the left of a sidecar; (2) the center cab where the motorcycle is in the middle of a jeepney-like cab; (3) the open cab, popularly called “*payong payong*” where an open sidecar, usually roofless or with an umbrella, is attached to a motorcycle; (4) the “*trisiboat*” is a motorcycle having the motor of a banca, a small boat used by fishermen; and (5) *trisikad* or pedicab, a non-motorized mode bicycle with an attached sidecar. The most common of all the motorcycle propelled modes is the “*habal habal*”, a single motorcycle taxi which sits as many as five people.

For the purpose of the research, the category “Unauthorized public transport” is used for motorized modes that are not legally allowed as public transport by the local government but have been historically tolerated by the authorities. “Authorized public transport” refers to those motorized modes of transport that serve commuters and whose operators pay the required fees of the land transportation office of the city government. “Private motorized transport” includes privately owned motorcycles, jeeps, cars, trucks, or other motorized vehicles.

**Figure 9**  
*Unauthorized Public Transport Modes: Habal Habal*



**Figure 10**  
*Authorized Public Transport Modes: Tricycles in the City: Jeepney-like Tricycle*



**Figure 11**  
*Unauthorized Public Transport Modes: Tricycles in the City: Open Cab*



**Figure 12**  
*Authorized Public Transport Modes: Jeepneys*



**Figure 13**  
*The Motor Vehicle as Public Transport: Taxi*



The operators of unauthorized public transport do not pay the required city registration fees. However, “illegal”, these modes continue to ply specific routes in many areas of the city and serve the city population. This category is important in the light of the reality of unauthorized transport arrangements in cities in the low and middle-income countries.

A case in point is the *triskad*, which is considered illegal, yet continued to ply major roads of the city. If caught, the *triskad* is confiscated by authorities and thrown into a city truck. Some have been dumped inside the Traffic Management Coordinating Board compound, piled up and left to waste.

Quick rounds of entrances to residential areas within the city in all districts of the city reveal queues of *triskad*. The *triskad* provides short distance transport to homes of residents. A review of regulations concerning NMT in Davao City –whether “illegal” or banned, is one dimension of ensuring equitable and gender responsive transport. This includes ensuring the informal sector is free to operate transport services or a review of policies which restrict the operation of the unauthorized sector.

While the global environmental movement assumes the ecological value of pushing for non-motorized transport for short distances within cities, this is very far from the realities in many parts of the Philippines.

**Figure 14**  
*Scrapped Non-Motorized Transport*



The existence of several associations of pedicab drivers reveal that these unauthorized means of public transport have been operating in Davao City for many years, serving the transport needs in many communities in the city. Since they ply routes crossing boundaries of different barangays, most elected officials have a NIMBY (“not in my backyard”) attitude, refusing to address concerns of the pedicab associations since they occur beyond their geographical boundaries. There is also no city-level ordinance to respond to this.

The TMCB agree that the roads in Davao City should be shared with the various modes of transport. Non-motorized transport such as the *trisykad* is seen by the TMCB as the epitome of what blocks the very goal of an efficient transport system: the flow of traffic which is officially assumed to be vehicles and anything that moves on the road. Official documents of the city affirm that such forms of NMT like the *trisykad* are also the means of transportation of the poor and their families. The interview with a key informant from the TMCB reveals the prevailing official position is that *trisykads* should not be allowed to ply the roads of the city. The official thinking is also that since there is no law about it, therefore, it is illegal. It



cannot be legalized since this requires registration. The City council passed Resolution No. 0176-01 on stricter trisikad regulation in 2001.

#### 4.5 Travel Differences in the City: Results of a Multi-Dimensional Examination

Are there differences in travel behavior between higher income and lower income females? Between men and women? Between men and women in different locations of Davao City? What are the implications of these differences in the construction of the transport system shaping Davao City? If there are differences in travel experiences and needs of people in the city, is there information to inform decisions about which projects can serve the “greatest public good?”

The following fields where data is gathered for the interaction of gender and transport maybe useful to those involved in making decisions in cities: access to different modes of transport. The cost of transport, trip characteristics (modes, frequency, trip length, reasons for trips), transport qualities. What are the distinctive characteristics of women’s experiences? This examination of travel differences will allow understanding the effect of given policies in the city on different groups, as well as the response to different government policies and the programs on specific groups. This section shall present data from the survey and its subsample. Trips and trip legs consider all means of transport except walking. Where appropriate, the survey data is also contextualized with data from the focus group discussions with different stakeholder groups, and in-depth interviews with women.

##### 4.5.1 The Income Earners in the City

The survey represents aspects of the experiences of people of the city who are involved in a range of regular and irregular income earning activities. Table 8 shows the range of income earning work in the city, from the words of the workers themselves. Work settings covered by the survey include schools, markets, private and public sector offices, a hospital, a factory plant, and a farm. Table 9 categorizes their work according to the ILO occupation classifications used globally. As these tow tables show, there is a wide variety of occupations for men as for women. Table 10 shows the distribution of men and women over income categories. The

“lower income group” in this section refers to those whose monthly incomes are below the poverty line, while the “higher income group” refers to those who are not considered economically “poor” because their income is above poverty line. The poverty threshold of Davao City is 8,000 pesos per month. All respondents whose income is below the poverty threshold of Davao City of 8000 pesos are categorized as coming from a “lower income” group while those who earn 8,000 and above comprise the “higher income” group.

Market workers in the lower income group comprised 17 per cent of the total respondents while market stall owners in the higher income group comprised 5 per cent of total respondents. Medical professionals and finance, sales, cost, and budget analysts in the higher income group made up 5 per cent of the respondents. Office clerks in city hall were both from the lower income and higher income groups.

**Table 8**  
*Sources of Income of Respondents*

Source of Income	Male	Female	Mixed
Baker	x		
Beautician			x
Billing section assistant			x
Branch Manager		x	
Broiler Production Representative	x		
Budget Analyst		x	
Carindaria owner			x
Carpenter	x		
Cashier			x
Cellphone Technician	x		
Clerk warehouseman	x		
Collector	x		
Construction worker	x		
Computer assistant			x

Source of Income	Male	Female	Mixed
Computer Programmer			x
Computer Technician	x		
Cost analyst			x
Daycare Worker		x	
Debit cash collector	x		
Doctor			x
Driver	x		
Encoder			x
Farm laborer	x		
Finance Analyst			x
Foreman	x		
Hand Packer	x		
Helper			x
Hospital Food server	x		
Human Resource assistant		x	
Janitor	x		
Manicurist			x
Messenger	x		
Midwife		x	
Nurse			x
Nursing Aide			x
Office Clerk			x
Operations Assistant		x	
Orderly	x		
Pest control worker	x		
Population program officer		x	
Pharmacist		x	
Procurement officer	x		



Source of Income	Male	Female	Mixed
Production analyst			x
Record officer			x
Salesman	x		
Sales Analyst		x	
Sales Coordinator			x
Sari-Sari store vendor		x	
School Principal			x
Security guard	x		
Stall and market sales		x	
Stall owner			x
Stock Clerk			x
Tailor	x		
Teaching Professional			x
Telephone Operator			x
Therapist			x
Waiter	X		
Watch repairman	x		

**Table 9**  
*Occupation Classification and Gender*

ILO occupation classification	Gender			Grand Total
	female	male	no information	
clerical support worker	28	24		52
crafts and related trades worker		9		9
elementary occupations	11	53		64
manager	9	4		13
plant and machine operator & assemblers		4		4
professionals	52	40		92
service and sales workers	64	36	1	101
technicians and associate professionals	11	7		18
incomplete information	3	3	1	7
<b>Grand Total</b>	<b>178</b>	<b>180</b>	<b>2</b>	<b>360</b>

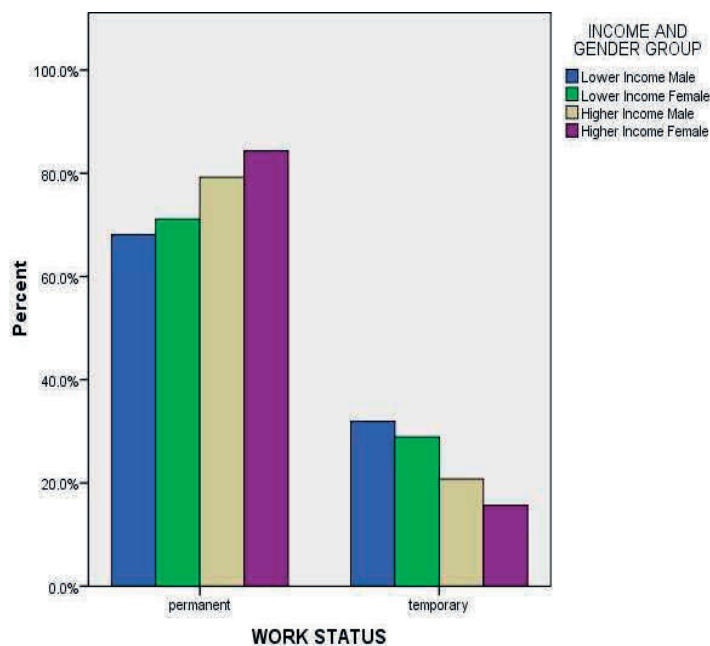
**Table 10**  
*Income and Gender*

Income per month	Gender			Grand Total
	female	male	no information	
below PhP 8,000 [below Davao City poverty threshold]	78	93	1	172
PhP 8,000 - below PhP 10,000 [below national poverty threshold]	20	34		54
PhP 10,000 - 16,000 [low income but not poor]	55	33		88
PhP 16,001 - 32,000 [lower middle income]	12	7		19

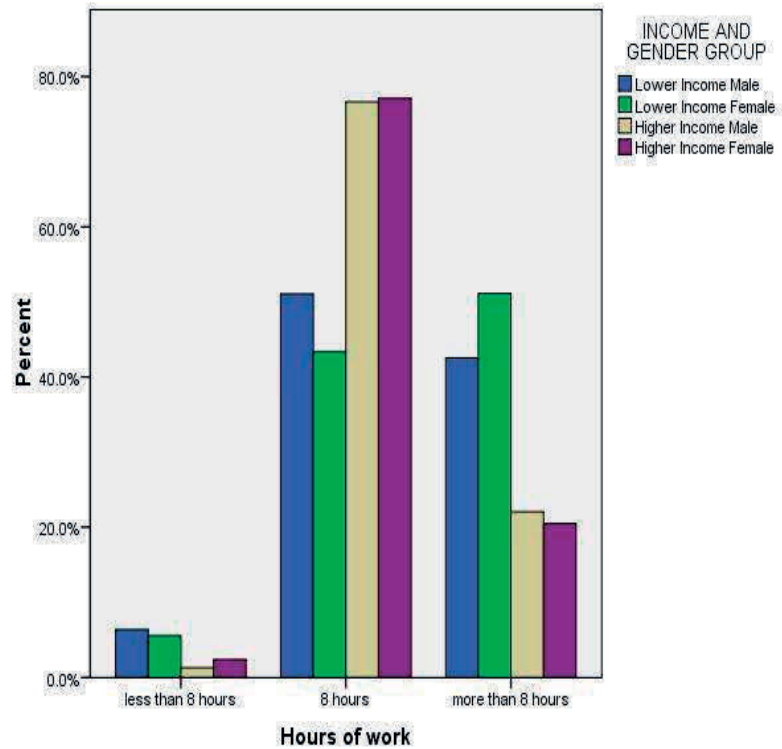
PhP 32,001 - 79,000 [middle income]	4	1		5
PhP 79,001 - 118,000 [upper middle income]		4		4
PhP 118,001 - 158,000 [upper income but not rich]	2			2
above PhP 158,000 [rich]	1			1
insufficient information	5	6	1	12
unpaid family worker	1	2		3
<b>Grand Total</b>	<b>178</b>	<b>180</b>	<b>2</b>	<b>360</b>

To understand the travel patterns of the respondents who have a defined work destination, it becomes necessary to categorize whether they are regular or irregular income earners. Both self-employed and employed respondents described their status at work as either permanent or temporary. Temporary includes respondents who cited their work status as temporary, contractual, on probation or casual.

**Figure 15**  
Work Status by Income and Gender Group

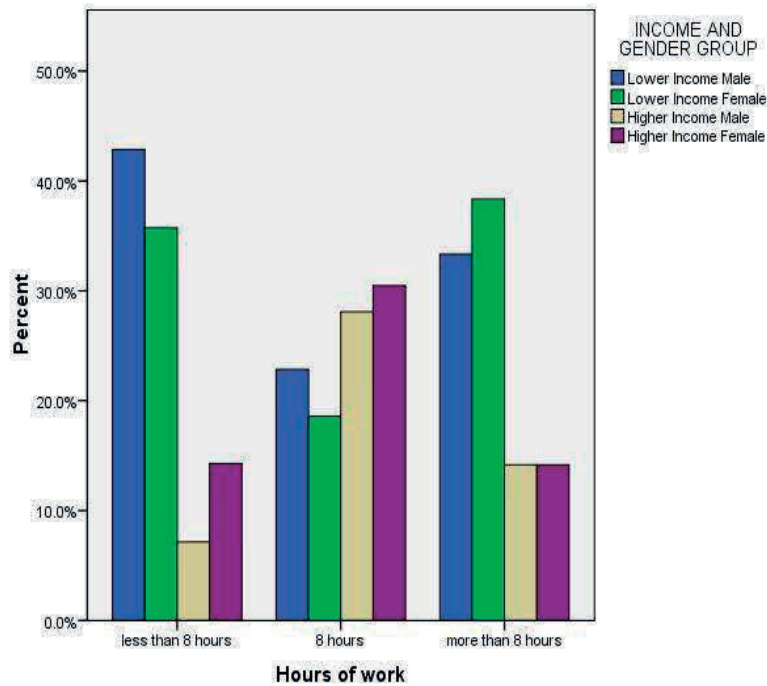


**Figure 16**  
Hours of Work by Income and Gender Group



All income and gender groups also have similar fixed start time in a shift of eight or more hours. Work, in terms of number of hours spent in paid work, is parallel for both male and female as they spend eight or more hours at work. The long hours at work (i.e., more than the standard 8 hours) is indicative of underemployment, which means having to be present more hours at work – whether in a single job or because they have multiple ones – than they would like in order to compensate for the low earnings per hour.

**Figure 17**  
Distribution within Hours of Work



A few have some time flexibility but must be there at work or are able to plan their own work hours. It is important to stress that in the differences of work period across income groups, planning of one’s own work hours, can mean many things. This could reveal that these respondents are self-employed, engaging in business enterprises as a survival strategy, rather than to exploit commercial opportunities. In the setting of the research, it must be emphasized that having one’s own work hours is not always considered a “privilege” by the respondents. Fixed 8-hour work is often associated with a having regular income, compared to the variability of the same in flexible-hour jobs.

Available literature on gender differences in high-income countries tackle transport modes, modal choice, trip distances, trip purposes and public transport use. (Transportation Research Board 2009) The few available studies in the low and middle-income countries, specifically in South Asia and in parts of Africa, likewise use the same categories. (Thynell

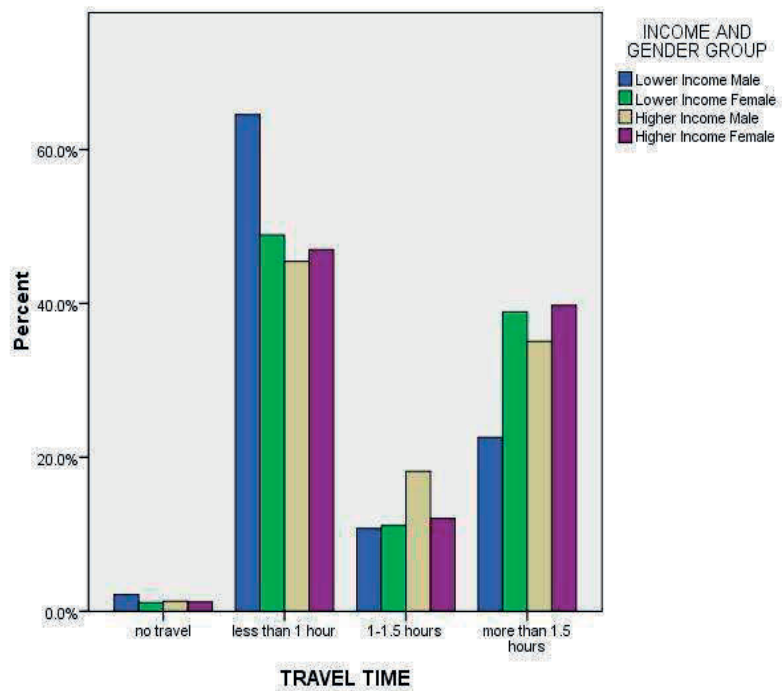
2015) As there have been very few studies done in the Philippines focusing on gender differences in transportation patterns, the data using these standard variables can be a starting point. But in adding the dimension of nature of work and work hours across genders may further contextualize these data: why do women and men make the number of trips they do, the distance they cover, and the transport modes they choose.

In their journey to and from their workplace, respondents make a number of trips and trip legs daily. Results of the study reveal that such trips range from no trip at all to twelve trips and trip legs. For each trip, a person has different transport roles — one can be a pedestrian, a passenger in a vehicle or a driver of the vehicle.

Ideally, transport is usually examined by distance of the standard variables of residential location (origin) and workplace (destination). Standard transport literature considers this as origin-destination studies. Berner (1997) notes distances are given as the number of jeepney rides rather than kilometers, considering that the actual accessibility of a place is much more relevant than its physical distance from the respective point of reference. This is affirmed in the responses of respondents who were carefully asked about their travel diary. Many respondents are unable to express accurately the number of kilometers distance of their homes to their place of work. To capture the point of view of the respondents, the study uses the number of trip and trip legs to provide an estimation of distance from home to workplace. Respondents were first asked about each trip they made in their daily commute from their home to their place of work and back. Secondly, they were asked about the specific purposes of each trip. The time each trip started and ended is likewise noted to calculate how long each trip took.

4.5.2 Travel Differences According to Income and Gender Group

**Figure 18**  
Travel Time by Income and Gender Group



*Travel Time, Number of Trip Legs and Travel Cost*

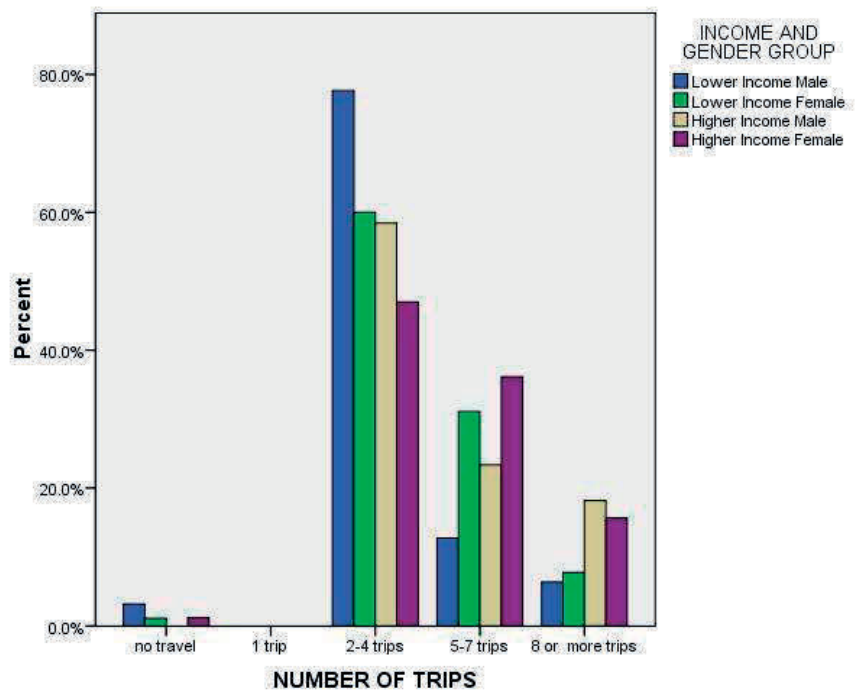
Figure 18 shows that among all income and gender groups, most travel for less than an hour, followed by more than 1.5 hours. A small percentage of each group does not travel at all as their place of work is where they also live. This is true for some of the respondents who live in the market-place.

Most of those that travel for less than an hour are lower income males while most of those that travel for more than 1.5 hours are females. Related to this statistic, it was observed that it is not always the distance from the point of origin to destination that determines the time needed for commute. Rather several factors are considered: the route of the public utility vehicle, the traffic, number of transport mode transfers, and the time of travel. For instance, it takes Mary Ann 45 minutes to get to her school

from her house, although the school is only two kilometers away. She leaves her house at 4:00 pm to attend her night classes, which end at 8:00 pm. Mary Ann's commute was only 15 minutes less of Julianne's travel time to her work. Julianne is a nurse whose workplace is around 10 kilometers away from her house. Her working hours are from 3:00 pm to 11:00 pm.

### 4.5.3 Number of Trip Legs

**Figure 19**  
*Number of Trip Legs by Income and Gender Group*

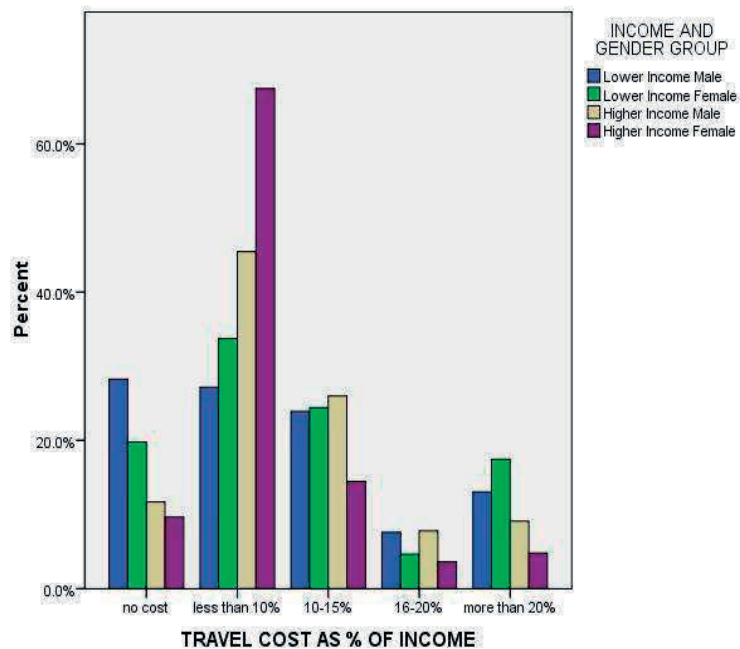


The income and gender groups have similar patterns. More than 45 per cent of each income and gender group have 2 to 4 trip legs to get to their intended destination, followed by 5 to 7 trip legs, then 8 or more trip legs and those who make no trips at all. Lower income males appear to be the least dispersed with around 78 per cent of the group having 2 to 4 trip legs while higher income females appear the most evenly distributed.



People in the lower income groups have fewer trip legs (2-4) compared to the higher income groups with males having more trip legs than females. On the other hand, people in the higher income groups have more trip legs (8 or more) with females having slightly more trip legs than males.

**Figure 20**  
*Travel Cost as Percentage of Income and Gender Group*



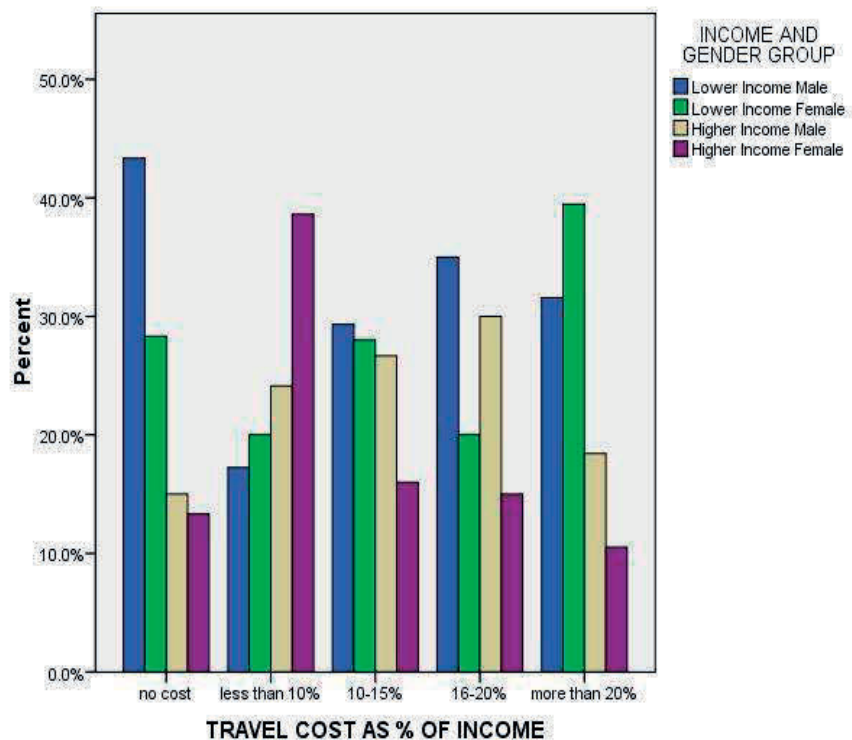
#### 4.5.4 Travel Cost as a Percentage of Income

While on the average, the lower income male and female groups has shorter travel time and less number of trip legs in their journey to and from their workplace, the relative cost of their transportation to their income is higher. (Figure 20). There are those who spend upwards of more than 20 per cent of their income on transport costs while the majority of the lower income’s transport expenses make up less than 10 per cent of their income. On the average, lower income women spend more on travel cost than lower income men.

There are more people in the lower income groups whose travel cost is more than 20 per cent of their income than people in the higher income groups. Slightly more lower income women than lower income men spend more than 20 per cent of their income on transportation; possible explanations for this trend may be attributed to (1) lower income women's travel route entails more switches of transport modes, and (2) they stop at more places on a single trip. Interviews with women also show that their reproductive tasks also entail bringing their children along in some parts of their trips, leading to more trip legs thus doubling the travel cost.

On the other end, around 40 per cent of those whose travel cost is less than 10 per cent of their income belong in the higher income female group.

**Figure 21**  
*Travel Cost as a Percentage of Income*



Around 67 per cent of the higher income females have travel cost that is less than 10 per cent of their income. Similarly, majority of the higher income males and lower income females have travel costs less than 10 per cent of their income (45 per cent and 37 per cent respectively). There are 28 per cent of the lower income males have no travel cost while 27 per cent have travel cost less than 10 per cent of their income. Interviews with some women commuters point to vehicle ownership as less costly in the long run, compared to the cost of daily commute. However, this option is open only to women of a certain (higher) income, as well as line of work. Rosario (not her real name) is a supervisor in a large corporate farm in District 3. She was issued a company motorcycle which she uses for inspection and monitoring work in the plantation, and also to get her to and from her workplace and home. Rosario only spends 125 pesos to fill up the motorcycle gas tank with 2.3 liters every two days. There is also a provision in her contract that the ownership of this company's motorcycle will be transferred to her name after four years.

Compared to Rosario who can claim the motorcycle as her own, in Mary Ann's household, the use of their car is contingent on one's capability to pay for its gas, not always on the need. Permission from her stepfather, who is considered the household head, is also needed. Mary Ann is a working student thus commutes almost everyday from her house to either her workplace or school.

#### 4.5.5 Trip Purposes

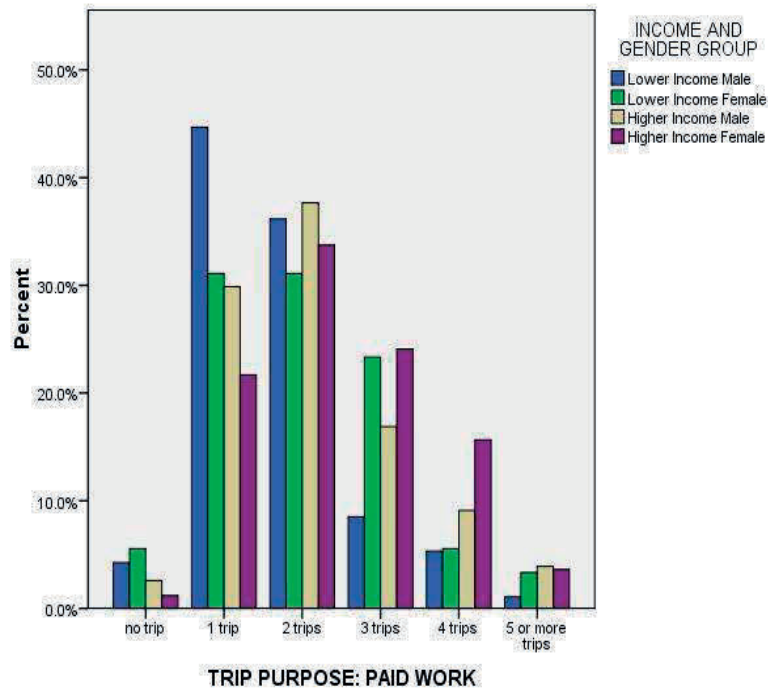
Trip purposes mentioned in the survey were home, work, market, grocery, and school, eating a meal, health related trips, visiting friends, picking up or dropping off a family member. Income earning work related purposes include trips to their workplace, trips to work-related meetings with their colleagues at work and trips towards paid work. Non-income earning related trips include bringing a child to school, shopping at the grocery or market, going to the bank, accompanying a family member on a health-related trip. Leisure-related trips were minimal across all income groupings. Trips with purposes related to their paid work and to unpaid work are categorized in Figures 21 to 23.

##### *Trip Purpose: Paid Work*

The average number of trips among all respondents is around 2 trips with a standard deviation of around 1.29 trips.

Most of Lower Income Males take one trip with a graph slightly skewed to the right. The other income and gender groups appear more normally distributed. Most Lower Income Females take between 1 or 2 trips while most of Higher Income Females take 2 trips. Similarly, most of Higher Income Males make 2 trips with those taking 1 trip coming second.

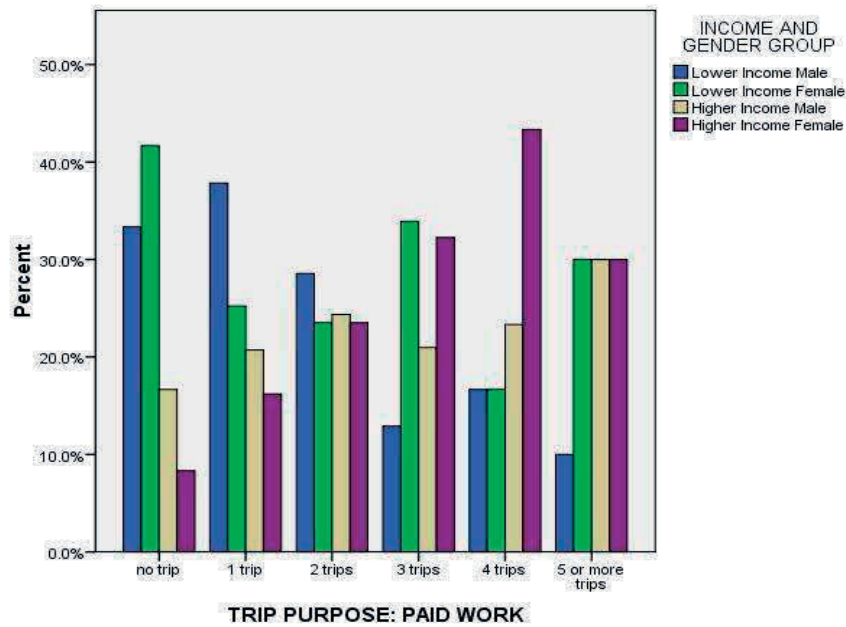
**Figure 22**  
*Number of Work-Related Trip Legs by Income and Gender Group*



Within groupings according to gender and income, it is observed that for lower income women there is an almost equal percentage of women who make no trips at all (meaning they walk to their workplace), and women who make 2 or more trip legs en route their workplace on a single travel (See Figure 22). On the other hand, the greater percentage of higher income women make 4-5 trip legs in the same circumstances, which indicates their commute is multi-modal. This may be explained by the distance of their point of origin (home) from their workplace: higher income women tend to live farther from their workplaces (e.g. in suburbs, where

real estate prices are lower). The use of multi-modal transportation necessarily implies walking short distances to access the next ride, although this element of commute is not captured in the data. The same pattern is observed when the surveyed population is disaggregated according to income.

**Figure 23**  
*Distribution within Number of Trips*

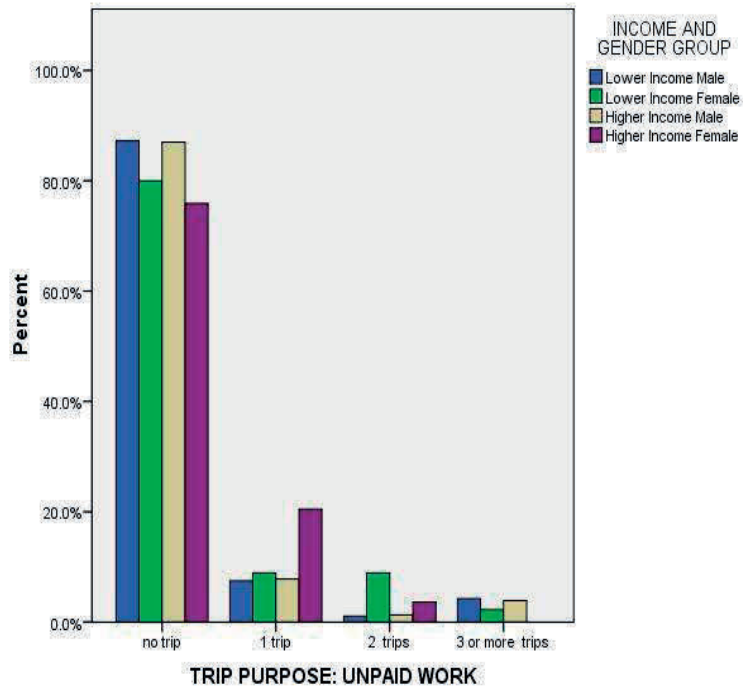


*Trip Purpose: Unpaid Work*

The average number of trips taken among all respondents is 0.28 trips with a standard deviation of 0.742 trips.

More than 75 per cent for each income and gender group take trips that are not related to income generation. However, more females take unpaid trips compared to males with slightly more higher income females than lower income females.

**Figure 24**  
Number of Trips for Unpaid Work by Income and Gender Group



The texture of household dynamics specifically in terms of unpaid work vis-à-vis transport is often invisible in quantitative data available on transport. These trip legs for unpaid work include traveling as part of care or reproductive work. The former is highly gendered as women are still expected to do this. This has implications to women’s travel time, cost and needs – all of which have been measured in transport studies but with a gender-blind framework. Two cases illustrate data on travel time, cost and needs of women in relation to their unpaid work that are missed in mainstream transport surveys:

- Marlyn is a 45-year-old teacher in Buhangin, which is located 5 kilometers away from her home. Angeline, the elder of Marlyn’s two daughters, has cerebral palsy. Marlyn recounted how as a parent she struggled with the city’s very limited facilities for special children like Angeline. From Angeline’s elementary to college years, Marlyn took her daughter to school in a non-aircon taxi. “*Kasama niya sa sasakyan ang walker niya. Tapos pagdating sa school, ibababa niya ang walker*

*at sasakay siya dito in going to the different floors kung saan siya papasok.*” [She loads her walker into the taxi. Then she unloads it when we get to the school and uses it going to the different floors where her classrooms are located]. They decided to enroll their daughter at the Holy Cross of Davao City school because this is one of the few schools in the city that has facilities for people with disabilities. The HCDC is a private college. “HCDC [has a] pathway designed for walkers in going to different floors of the school buildings, but this one is not mechanized, it is just a cemented pathway for walkers. *Walang ibang university daw na may ganon.* [No other university has things like that] Also, HCDC has elevators and has policy *nai-prioritize ang mga* differently abled persons *sa use ng* elevators.] [ HCDC has elevators and has a policy where the differently abled persons are prioritized in the use of the elevators}

- Maria Judet, 30 years old, works as an administrative assistant at the Davao City Hall. She is a mother to two young children, aged 2 and the other 6 years old. Unlike most who do attend to the health needs of their children on weekends, Maria Judet usually dovetails the needs of her children during weekdays on the way to or from work. Health needs of her children include buying medicines or needed supplies as well as consulting the staff of the health clinic for related situations of her children. On weekends, she is usually at home with her young children as she wants to spend time with them so she can give them the attention they need as she is busy at work the whole week.

#### 4.5.6 Transport Modes

The above presentation on paid and unpaid work reveals much about time and the respondents’ juggling of time for mobility. The following data will now present the various modes of transport used by the citizens. The time factor of the different transport modes reveals much about valuation of time of respondents. Is the average speed at which different transport modes can move relevant for decisions of the respondents? Is time spent traveling considered a loss for the respondents?

Choice of transport mode is an important variable because it is most likely influenced by income grouping since access to various modes is dependent on ability to pay. The results indeed show how income affects

aspects of travel behavior: mode choice for trips, number of trip legs, time spent, and travel cost.

- Bebet is a solo parent to two children. Apart from her and her daughters, five other people are part of her household, including her mother and sisters. Travel decisions regarding unplanned trips are contingent on the availability of money. Transportation from their house to the city downtown is expensive because the roads are unpaved, and in some parts muddy. The quickest way to get to downtown, that is, with the least stops, is to catch an airconditioned van plying their area which is expensive. If they are in a hurry, the surest way to get a ride is to make an extra trip to the van terminal in another part of the city because the van is often full by the time it reaches their stop. For shorter distances, their transport options include the jeepney and trisikad (when she has to bring her goods to sell at the market) and the *babal babal* if she is rushing to be at a community-related meeting
- To go to her place of work, Marlyn takes both authorized and unauthorized public transport such as jeepneys, open cab and tricycle are used. To bring her special child to school, the non-airconditioned taxi was the mode of transport.

Figure 25 shows the differences between the income and gender groups in modal choice and the number of trips made by each group using the different categories of transport modes per trip leg. It must be noted that “no trip” for each mode is indicated. Among those in this category of “no trip” are respondents who also do not travel at all to income-earning work because their home and their place of work are one and the same, or their workplace is near enough so they see that they consider themselves not making a trip at all.

### **Walking**

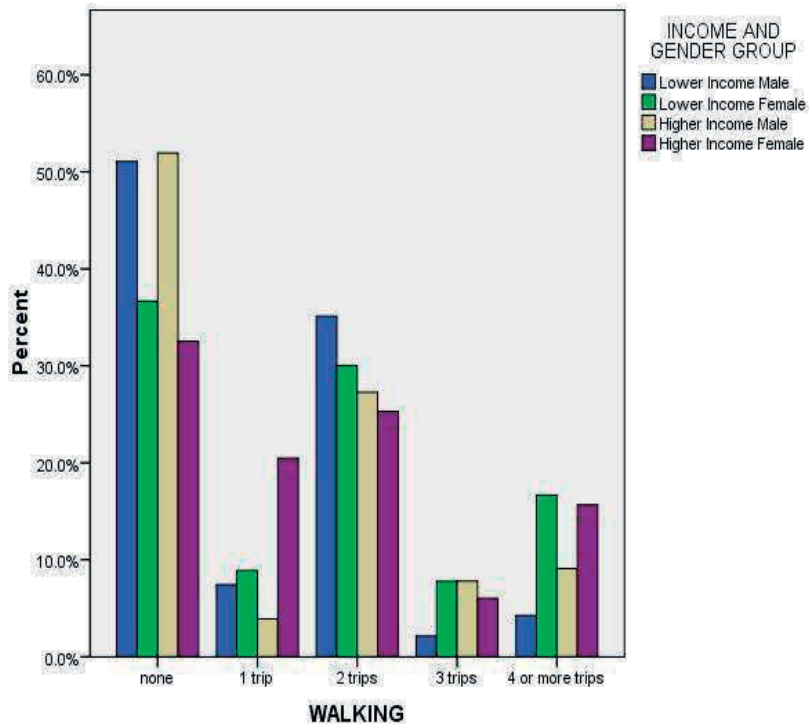
We only consider walking as part of a trip with other transport modes. For example, walking to the transport terminal or bus stop.

The average number of trips taken by walking in combination with other modes of transport is 1.33 with a standard deviation of 1.47 trips.

When it comes to walking, more females walk with slightly more Higher Income Females than Lower Income Females compared to males.



**Figure 25**  
 Number of Walking Trip Legs by Income and Gender Group

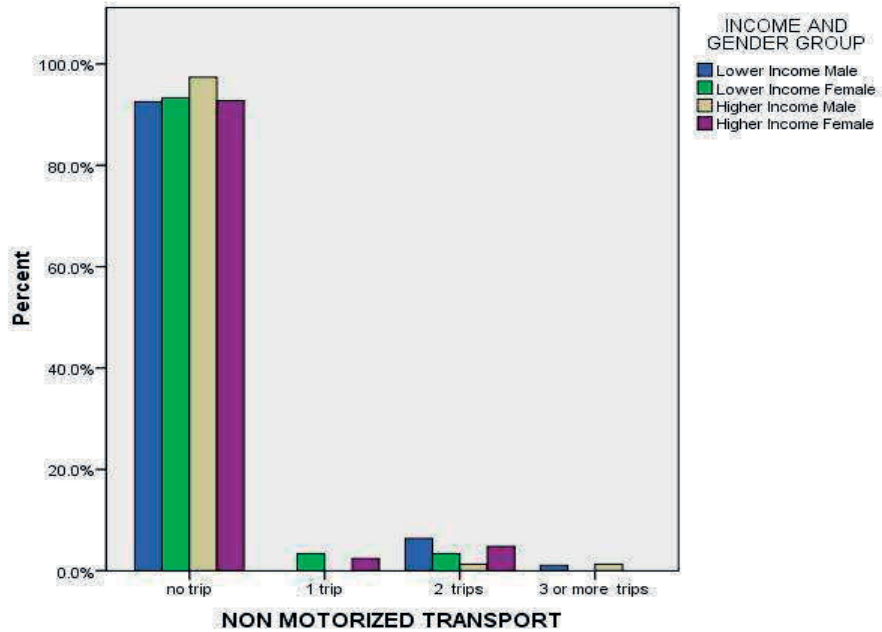


**Non-Motorized Transport**

The average number of non-motorized trip legs is 0.12 with a standard deviation of 0.49 trip legs.

More than 90 per cent of each income and gender group take motorized transport. With regard to non-motorized transport, there are fewer higher income males compared to the other income and gender groups that take these. People who have grown up in the city noted that this was a change from when they were younger, and people walked more often. The lack of sidewalks was also observed: “*Seldom na lang may sidewalks. Makipot na usually ang mga sidewalks. Saka karanivan sa mga tao sumasakay na kabiti malapit lang pupuntahan. Hindi tulad noon, kabiti mga estudyante naglalakad lang.*” [There are not many sidewalks. I also noticed that sidewalks are very narrow. Most people now always take a ride, even for short distances. It was not like in the past when students used to just walk to school.]

**Figure 26**  
*Number of Non-Motorized Trip Legs by Income and Gender Group*



**Authorized Public Transport**

The average number of authorized public transportation trips is 1.76 with a standard deviation of 1.72.

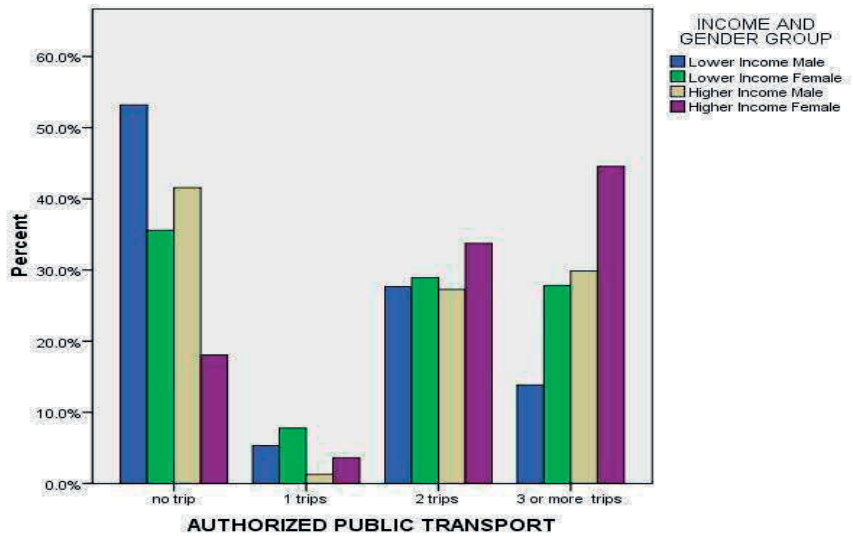
More than half of lower income males do not take authorized public transportation. On the other hand, around 45 per cent of higher income females take 3 or more trip legs using authorized public transportation.

**Unauthorized Public Transport**

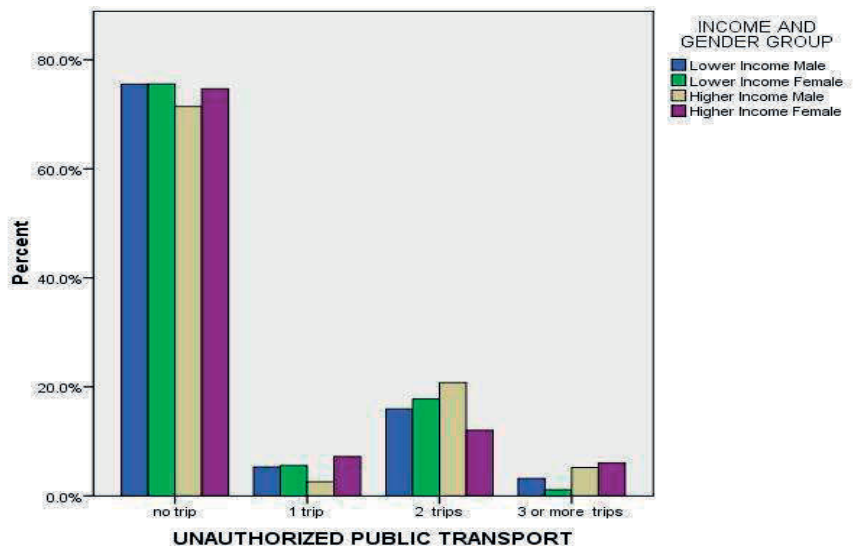
The average number of unauthorized public transport trip legs is 0.54 with a standard deviation of 1.04 trip legs.

More than 70 per cent of all income and gender groups do not use unauthorized public transport. There are more higher income males who take unauthorized public transport compared to the other income and gender groups.

**Figure 27**  
 Number of Trip Legs using Authorized Public Transport  
 by Income and Gender Group



**Figure 28**  
 Number of Trip Legs using Unauthorized Public Transport  
 by Income and Gender Group



## 4.6 Discussion of Findings

The findings show that there are similar and different travel experiences across gender and income groups. Generally, both women and men use multi-modal transportation to get to and from their workplaces, do their caring work (e.g., bringing their children to school) or access services. Majority of them take a number of trips per day and spend less than 10 per cent of their monthly income on travel expenses.

While not directly asked in the survey, the distance traveled to and from work or income-generating activities (approximately less than 5 kilometers) point to the respondents' preference for working near their place of residence. This observation is supported by the literature (Hansen 1999, Transportation Research Board 2009, Turner 2012). Residence near as possible to their places of work means less transport costs. This is likely an important consideration for low-income households already disadvantaged by their limited financial resources.

However, the relatively short distance is undermined by the length of time spent traveling, possibly pointing to transportation concerns of availability and accessibility of vehicles (e.g., waiting times, walking from one transportation terminal to another), mode of transportation selected, or structural issues such as traffic and road quality. Excluding the respondents whose paid work is located in their place of residence such as the market vendors, the range of travel time is from less than an hour to more than 1.5 hours.

Layering the above general findings with gender as a variable show that differences in the behavior of males and females regarding transport are not very pronounced. Significant differences are found in the travel time, number of trip legs en route their work (one-way), and travel costs. Women take more time and have more trip legs when going to their work than men. Their travel costs are also less than men's, mainly because they take less expensive (but multiple) modes of transportation. This also means that they walk more than the men to catch one mode of transportation after alighting from another. Women are also more likely to choose authorized modes of transportation, which may lengthen their travel route and time, compared to men who opt for unauthorized modes of transportation, which are expensive but can go through side streets to avoid road traffic. However, it should be noted that choice of transport mode may be

a function of several interrelated factors such as safety, security, and regulated fixed costs of fare. Unauthorized public transport modes can also be cost effective for its users, especially because the fare is not standardized, and thus can be negotiated lower. It is still expensive, but this is leveled off by the less time spent on traveling i.e., getting to one's destination quicker and with less discomfort

Walking, as a mode of transport, reveals limitations in terms of time and requirements of assumptions on a traveler's health. The data in the survey showed that few trips of more than 5 kilometers are made regularly. Travel surveys tend to dismiss short trips. One study emphasized that as high as 83 per cent of the poor women compared to 63 per cent of men walked to work. (Sri as cited in Turner 2013) The figures in another city were 59 per cent of the women surveyed walked, while only 39 per cent of the men walked. Turner (2013) stresses walking as very powerful in the planning of the spatial location of local services and facilities, as well as planning the transport network itself. Available studies often disregard walking and the figures available do not take account of walking associated with other modes of transport (i.e., walking to a terminal to access the public transport mode) (Porter 2002, Forsyth, and Southworth 2008) This is very important to note as walking is often taken for granted. Thus, not only those in the paid economy who need to access public transport through walking but the many women who are not in the paid work group, who are in the care economy such as full-time mothers and housewives, comprise the large numbers who have an impact on walking as a travel demand.

Related to this, every time men and women in Davao city use a jeepney, *habal habal*, multicab, tricycle, they are not only public commuters, but also pedestrians. Cities become unfriendly to these modes when transport spaces are designed with only motor vehicles as the priority. People walking need safe spaces. Cities will only improve on an aesthetic, humane and human scale if streets include large numbers of people walking and playing safely. Since walking is an element to public commuting, streets must be made safe to crime, friendly to vulnerable users such as women, children, the disabled, and the elderly.

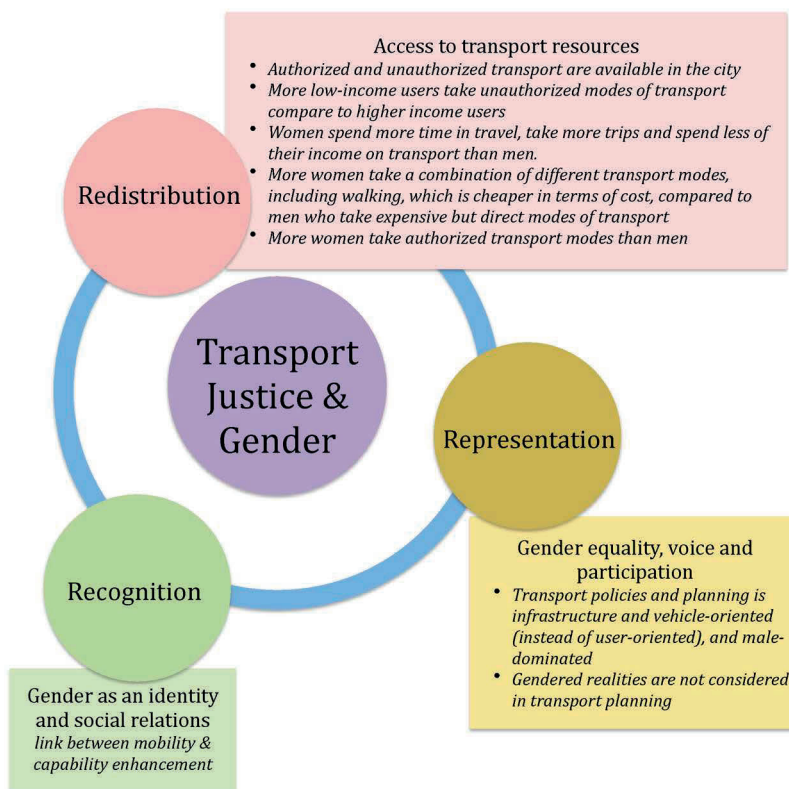
On the other hand, when many public commuters depend on motor vehicle use for their basic transport needs, the situation creates a political demand for greater provision of motor vehicle facilities and road space, resulting in Davao City local government to press for stricter measures for

drivers in terms of enforcement of safe driving habits such as driving and drinking. Given these, not only do men and women often use available motor vehicles for short trips, but also demand facilities that reduce time for long trips. This can be seen in their use of motorized, sometimes even unauthorized, public transport even for short trips. Such conditions serve to increase exposure of people on roads with less-than-optimal conditions for ensuring road safety. While men may be more exposed to more road safety issues as drivers and because of their more frequent use of unauthorized public transport vehicles when commuting, women are no less vulnerable because of their use of multi-modal transportation in less-than-ideal traffic and road conditions and related infrastructure such as sidewalks, and footbridges.

Travel time is another dimension of transport studies, and this study, in viewing it with a gendered lens, also surfaced the experience of women traveling for longer periods than men for the following reasons: multiple transfers of transport for a single trip, and multiple stops en route to the intended destination. These in turn may be linked to the reproductive work that women, more than men, are likely to engage in: bringing and fetching children to school and buying food and household supplies for the day's consumption, for instance. Women's preference for authorized modes of transportation is also a factor to their longer travel times, as mentioned earlier.

As mentioned earlier, the findings in this section are parallel to other studies using conventional survey as the data shows some consistency with available research. The research process may then be applied to a wider group in the city, apart from those who took part in this study. Emphasis is also on the limitations of surveys, i.e., being static at one point in time. To address this, the study complemented the survey data with focus group discussions (on transport policies and policy directions) and in-depth interviews with eight women (travel needs, and experiences). These data sources appear to support each other thereby provide triangulation of methods for gender analysis of access to transport in Davao City. Specifically, it confirmed the invisibility of gendered realities in transportation-related researches, in policymaking and among different stakeholder groups, and even with women themselves who may view their transportation needs as same as everyone else's or not important to be part of the city's transport planning.

**Figure 29**  
 Summary of Findings: Redistribution and Representation



**Notes**

<sup>23</sup> Parts of this chapter are drawn from the author's previously published work (Rivera 2010)

<sup>24</sup> As defined in the Local Government Code (RA 7160), a highly urbanized city is “A city with: (1) a minimum population of 200,000 inhabitants, as certified by the National Statistics Office; and (2) the latest annual income of at least 50 million pesos based on 1991 constant prices, as certified by the city treasurer.”

<sup>25</sup> For a discussion on the contributions of women’s NGOs to Davao City development, see also Coolige (2017)

<sup>26</sup> The linear city was an urban plan for an elongated urban formation. It is one which consists of several functions running parallel to each other with the same width in definitely in both directions. The city would consist of a series of functionally specialized parallel sectors. The sectors of a linear city would be (1) a purely segregated zone for railway lines, (2) a zone of production and communal enterprises, with related scientific, technical and educational institutions, (3) a green belt or buffer zone with major highway, (4) a residential zone, including a band of social institutions, a band of residential buildings and a “children’s band”, (5) a park zone, and (6) an agricultural zone with gardens and state-run farms. (Doxiadis, 1967).

<sup>27</sup> This is a distinct concept used in development literature. Has the same meaning as “socialized” in the international audience.

<sup>28</sup> No data is available on the percentage of women in elected positions and those working in the local government, specific to Davao City. In the Davao Region (which is composed of Davao City and other municipalities), however, women comprise 19.48 percent of elected local officials, and 45.1 percent of LGU workers.

<sup>29</sup> Jose Gestuveco, personal communication, 17 September 2008.

<sup>30</sup> The following were the key city transport planners in Davao City, who were also interviewed for the study: Jose Gestuveco, Head, City Engineer’s Office; Angela Librado-Trinidad, City Councilor, Chair of Committee on Women, Children and Family Relations; Leonardo R. Avila III, City Councilor, Chair of Committee on Environment and Natural Resources; Alfredo A. Pontillo, Chief Technical Assistant, City Administrator’s Office; Mario Luis Jacinto, City Planning and Development Coordinator; and Cesar Gempesaw, Secretary, Traffic Management and Control Board.

<sup>31</sup> Autocalesa is another word for jeepney. As the Filipino jeepney is an icon of Filipino culture and heritage, it reveals the Filipino people’s ingenuity. The jeepney evolved from the *Calesa* – the Filipino version of a horse-drawn carriage. In 1932, an enterprising Filipino came up with a novel idea of manufacturing a “new” version of the *Calesa*. He positioned it as a cheap alternative to the expensive taxis, which were starting to grow in numbers then. This new mode of transportation, dubbed the “auto-calesa,” was based on a front-wheeled DKW transporter that was becoming popular in the rural areas of Germany and which were being imported into the Philippines in early part of the 20th century. By joining the chassis with a locally manufactured carriage, similar to a *Calesa*, one could produce a low-priced public carrier that can go anywhere, on wide or narrow streets. The concept vehicle was marketed by DKW-AC Company, Manila in 1932. Retrieved from <<http://aboutph.com/2010/04/auto-calesa-%E2%80%93-the-jeepney%E2%80%99s-greatgrandfather/>> accessed 02 September 2013.



# 5

## Recognition: Safety and Security of Transport Users

### 5.1 Introduction

This chapter<sup>32</sup> sets out to show why and how issues related to transport environment (safety and security) should be included in current transport planning discourses in the Philippines. First it elaborates on the normative meanings of transport safety and vulnerable users, developed by the World Health Organization (WHO), using standardized data of country studies to show the magnitude and characteristics of transport environment problem on a global scale and their variations according to national income level. The case of the Philippines will be discussed next, starting with discussion on the weakness of transport planning research and an emerging critique on the techniques of defining safety and monitoring traffic accidents adopted by government bodies. Such a critique may open new avenues for a more comprehensive understanding of the transport environment and the social distribution of vulnerability to transport accidents. The findings in Davao City on traffic accidents and gender-based attitudes and beliefs in transport safety may help to establish a new basis to study transport safety in the context of local politics of spatial planning. The main aim of this chapter is to illustrate the importance to bring to the center of transport policy and planning in Davao City, the realities, and voices – particularly of women – that have been placed on the margins of scientific and political representation. Transport safety, as road safety and security of users, should be brought under the planning frame of social policy in community development where it can receive due attention in the local planning processes. Going beyond numbers and using a gender lens in gathering data and scrutinizing can also contribute to more nuanced understanding of the meanings of safety and security.

## 5.2 Vulnerability and Urban Transport: Main Findings

Vulnerable transport users may be conceptualized in terms of specific groups of population who cannot afford a secure mode of travel and must opt for existing modes with which they face high risks of injury. The significance of both poor transport safety and security goes beyond the direct injury and trauma suffered by those involved in accidents. Attitudes towards vulnerability in transport also have important social policy implications. The absence of transport safety can affect people's travel habits and ultimately shorten the extent of their mobility at best or lock them in an immobile situation at worst. This can work against local community development efforts that encourage active participation of those with no or low incomes, who are most likely inclined to protect themselves by withdrawing from socially important activities, such as adult education classes held during the nights for women (Caiazza 2005, Sakaran 2003, Yavuz and Welch 2010)

International standards on transport safety and security are relatively new. The World Bank (2002) distinguishes the two terms, "transport safety" and "transport security;" the first one refers to the vulnerability to accidental injury, usually involving at least one vehicle as the instrument causing the injury, while the latter is the vulnerability to intentional criminal or anti-social acts suffered by those engaged in trip making. A key idea here is the vulnerability of people when they are in a public space: they may be injured by a vehicle, regardless if the vehicle is motorized or non-motorized (safety), and they may also be subject to intentional harm from other people while they are in transit from one point to another (security).

The WHO definition of transport-related injuries is narrower, focused only on road safety (injuries arising from vehicular impact). The main reference is the WHO International Classification of Diseases-11 (ICD-11),<sup>33</sup> which is used by hospitals, regions, and countries worldwide in reporting and monitoring various diseases. This enables comparison and sharing data using a comparable and consistent standard across time. The ICD-11 incorporates 18 specific categories and definitions of events, objects and people involved in transport accidents. The WHO ICD-11, for instance, forwards "transport accident" as "any accident involving a device designed primarily for, or being used at the time primarily for, conveying persons or goods from one place to another", in contrast to the more specific "traffic accident" which is any vehicle accident occurring on the

public highway (i.e. originating on, terminating on, or involving a vehicle partially on the highway).<sup>34</sup> (WHO 2018b)

Regardless of the terms adopted by international agencies, it is clear that by 2010, global discussions on the broad idea of transportation – from its niche in national economies and development planning, to its impact on energy, the environment and climate change -- has gained traction. In March 2010, the United Nations General Assembly proclaimed 2011 to 2020 as the Decade of Action for Road Safety, with a goal of stabilizing, then reducing forecasted traffic fatalities in the world.<sup>35</sup> The document adopts a “safe systems” approach which:

... aims to develop a road transport system that is better able to accommodate human error and take into consideration the vulnerability of the human body. It starts from the acceptance of human error and thus the realization that traffic crashes cannot be completely avoided. The goal of a safe system is to ensure that accidents do not result in serious human injury. (United Nations Road Safety Collaboration, 2010)

The approach implies a shift from the view that responsibility for road user safety largely lies with the road users themselves, to one that sees transport system designers and planners as primarily responsible. This includes road managers, the automotive industry, law enforcers, politicians, and legislators. Other stakeholders that should also be engaged in transport, specifically in road safety, are the health service providers, the judiciary, schools and non-government organizations (ibid.). Consistent with this, the Global Plan for the Decade of Action on Road Safety identifies five pillars for national and local level actions on transport, namely: road safety management (institutional capacity building), safer roads and mobility (development of road networks and related infrastructure), safer vehicles (improvement of vehicle safety standards, including on performance assessment and technologies), safer road users (behavior), and post-crash response (emergency treatment and long-term care for crash survivors. (ibid.)

Whereas reference to road safety was absent in the Millennium Development Goals (MDGs), a global blueprint of action for reducing extreme poverty (2000-2015), it was included under two of the Sustainable Development Goals (2015-2030), specifically in Goal 3 (Ensure the healthy lives and promote well-being for all at all ages) and Goal 11 (Make cities and human settlements inclusive, safe, resilient, and sustainable) to wit:

- Goal 3.6 By 2020, halve the number of global deaths and injuries from road traffic accidents
- Goal 11.2 By 2030, provide access to safe, affordable, accessible, and sustainable transport systems for all, improving road safety, notably by expanding public transport, with special attention to the needs of those in vulnerable situations, women, children, persons with disabilities and older persons

(United Nations Development Programme, n.d.)

The SDG takes off from the accomplishments of the MDGs and expanded global targets or focus areas from the eight to 17 to address not only extreme poverty and its symptoms, but also issues that have great impact on development outcomes such as sustainable production and consumption, peace-building good governance, and justice. Particular to road safety, it goes beyond reducing fatalities from vehicular crashes but also recognizes the social context of transport systems where the needs of women, children, people with disabilities and the elderly are not being considered in designing and planning. (ibid)

### 5.2.1 The Magnitude of the Problem of Transport Safety

Traffic safety is a public health issue that can lead to social and economic losses from the individual to national levels (Global Mobility Report 2017).<sup>36</sup> Road safety encompasses “safety of mobility across all modes of transport by avoiding fatalities, injuries, and crashes from transport mishaps.” (ibid.) The statistics on transport-related crashes and deaths is a key indicator of road safety. According to the Global Mobility Report in 2017, motorcycle users have the highest risk for road deaths, followed by cyclists and pedestrians, relative to car occupants, while bus riders are 10 times more likely to be safer than car occupants. Rail and air transport have the lowest frequency of crashes among public transportation modes. Worldwide, 40 to 50 percent of traffic fatalities also occurred in urban areas. The WHO also brought to the attention of policy makers and transport planning scholars that 1.35 million deaths on the world’s roads, yet this number had to be viewed in the context of a parallel 15 percent global increase in registered vehicles (WHO 2013)<sup>37</sup>. Moreover, it presented the term of

“vulnerable road users” (VRU) to apply to the most at-risk road users such as pedestrians, cyclists, motorcyclists and passengers of unsafe public transport (WHO 2009). It is estimated that 54 percent of road traffic fatalities are pedestrians, cyclists, and motorcyclists (WHO 2018c). A significant number of pedestrian and bicyclists’ deaths (13%) are recorded in low-income countries which account only for 1 percent of the total registered motor vehicles worldwide, compared to high income countries (7%) where 40 percent of registered motorized vehicles worldwide come from. Of all VRUs, pedestrians are most at risk in urban space due in part to the large amount of pedestrian and vehicle activity in urban areas (Zegger and Bushell 2012:1).

However, road safety issues – and especially for VRUs – go beyond fatalities. As early as the 1990s, policy research on transportation observed that the extent of safety and security issues for pedestrians and cyclists are heavily underestimated (OCDE/OECD 1998). In the USA in 2017 alone, 5,977 pedestrians and 783 bicyclists were killed in crashes involving motor vehicles. From 12.6 percent in 2003, the total traffic fatalities in the USA jumped to 18.2 percent in 2017. It is notable, too, that while fatalities involving pedestrians and bicyclists involving motor vehicles increased by 32 percent from 2008 to 2017, in the same period, overall traffic fatalities (covering fatalities who are not pedestrians and bicyclists) decreased by 0.8 percent (Pedbike info, n.d.). An interpretation of this statistic may be that systems and technologies have been improved that it can lessen the risk of fatalities in the event of crashes, however, certain groups of road users remain to be highly vulnerable, specifically the pedestrians and bicyclists. Transport scholars have begun to work on issues regarding the social distribution of risks of accident and explore the legitimacy of favoring the most vulnerable road users. Virtually no low income and less-motorized country has been successful in reducing the number of road traffic crash fatalities and injuries in the recent past. (Grimm and Treibich 2012:3). The situation and problems of low and middle-income countries (LMICs) are far more complex than high-income countries since the standards instituted for vehicles, roads and highway furniture are based on traffic patterns and types of crashes which are very different (Mohan 2008: 727). Many countries in the world are undergoing rapid urbanization and motorization, increasing exposure to determinants of road traffic injuries such as unsafe public transportation, higher speeds and a diverse vehicle mix on the road (Hyder and Peden 2003: 2034). Almost a decade after the

Hyder and Peden report, these findings are confirmed by Grimm and Treibich (2012) in a review of several studies around the world on road traffic crash fatalities, citing parallel reasons for this greater complexity as (1) a large proportion of income poor road users; (2) a high proportion of vulnerable road users sharing the road with motorized vehicles; (3) high population density in urban areas; (4) a low enforcement level of road traffic rules and regulations; and (5) severe limitations on public resources available for roads and other infrastructure (Grimm and Treibich 2012: 3).

Clearly, pedestrian safety should not be taken as an ordinary public issue, but one which manifests policy failure on many levels, and can have wider repercussions on social development. While many countries in the world have strategies laid out to address the serious trends in pedestrian crashes, it is clear that pedestrian safety amenities are not a priority in many low and middle-income countries. The issue of VRU has been ignored for decades and future projections provide stern signals. Reports predict that in the last 30 years of the 21<sup>st</sup> century, more private cars will be produced than in the first 100 years of motorization. Majority of these vehicles will be introduced to the roads of low and middle-income countries, many of which host unprecedented numbers of VRU fated to become road crash victims (Bliss and Breen 2012). In the same period, road crash deaths and injuries in low- and middle-income countries are projected to be the 4<sup>th</sup> largest cause of healthy life years lost by the total population in 2030, compared with tuberculosis (26<sup>th</sup>) and malaria (15<sup>th</sup>)<sup>38</sup> (Bliss 2008).

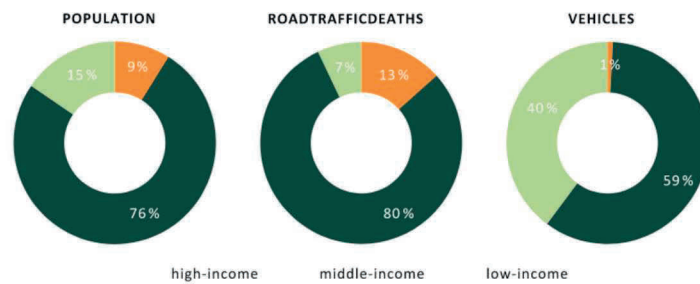
### 5.2.2 Income Inequality and Road Traffic Injuries: Comparison Across Countries

With increasing numbers and exposure of VRUs, combining mobility and safety of VRUs is an emerging issue in industrialized as well as in LMICs. On the other hand, increasing motorization on improved roadways in many high-income countries has been found to have reduced the exposure of pedestrians and bicyclists, and the number of pedestrian and cyclist fatalities decreased even more than the overall number of traffic fatalities (Shinar 2012: 1). On the other hand, in industrialized countries as the US, the latest data show that trends in VRU injuries have recently increased in urban areas, due to environmental, economic and traffic congestion (Constant and Lagarde 2010:1).

From a comparative perspective, between 1968 and 1985 road accidents decreased by around 20 percent in OECD countries, and increased

by 300 percent in Africa, and by almost 200 percent in Asia (TRRL Overseas Unit 1991) Countries like Brazil, India and China have been experiencing high increase of road accidents over recent decades (Vasconcellos 2001: 26). It is important to take note that through the decades, significant safety improvements for motor vehicle drivers and passengers have not necessarily had a parallel development in the safety of VRUs, as is the situation in LMICs (WHO 2009). From 2013 to 2016, there were no improvements in the number of road deaths in all low-income countries, compared to the reduction of the same in 48 middle- and high-income countries. In the same period, the statistics on road fatalities even increased in 104 countries (WHO 2018).

**Figure 30**  
*Proportion of Population, Road Traffic Deaths, and Registered Motor Vehicles by Country Income Category*

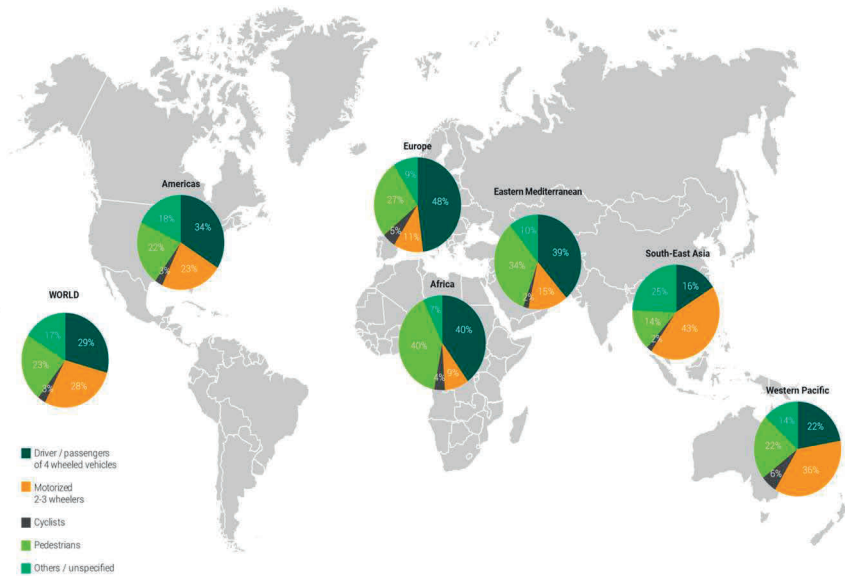


Source: WHO 2018c

Figure 31 show that in the distribution of road traffic deaths by various transport modes on the road, pedestrians are highest in low and middle-income countries. In high and middle-income countries, most road user fatalities are those riding motorized 4 wheelers. This graphic presentation compares LMICs and HIC pedestrian deaths, where a greater portion of fatalities occurs in the LMIC countries. Figure 31 shows more specific data on traffic fatalities by user type and by WHO region.



**Figure 31**  
*Distribution of Road Traffic Fatalities by Road User Groups by WHO Regions*



Source: WHO 2018c

Table 11 shows in more detail the data on road deaths alongside the countries' income classification and number of registered vehicles in the context of Southeast Asia. As with the global trends, high income countries (Singapore and Brunei Darussalam) have the lowest rate of road traffic deaths, while the highest are found in middle income countries, particularly in the upper middle-income countries. Regardless of the income classification of the country, majority of these deaths involved drivers or passengers of motorized 3 and 2-wheeled vehicles which are popular in the Southeast Asian region.



**Table 11**  
**Distribution of Road Fatalities by Country Income Levels**  
**and Road User Groups in the ASEAN Region**

Country and Income Classification	Total Number of Registered Vehicles (2013)	Total Number of Road Traffic Deaths (2016)	Estimated Rate of Road Traffic Deaths per 100,000 population (2016)	Percentage of road traffic deaths by road user type (%)				
				Drivers or passengers of 4-wheeled vehicles	Drivers or passengers of 2 or 3-wheeled vehicles	Cyclists	Pedestrians	Others
<b>High income</b>								
Singapore	974,170	197	2.8	18	46	8.9	27	1
Brunei Darussalam	no data	no data	8.0	no data	no data	no data	no data	no data
<b>Upper middle income</b>								
Malaysia	23,819,256	7,129	23.6	24	62	2	7	6
Thailand	32,476,977	24,237	32.7	13	73	2	8	4
<b>Lower middle income</b>								
Indonesia	104,211,132	38,279	12.2	6	36	2	21	35
Lao PDR	1,439,481	971	16.6	19	67	3	9	2
Myanmar	4,310,112	10,809	19.9	26	23	9	26	16
Philippines	7,690,038	10,379	12.3	25	53	2	19	1
Timor Leste	65,533	188	12.7	no data	no data	no data	no data	no data
Vietnam	40,790,841	22,419	26.4	no data	no data	no data	no data	no data
<b>Low income</b>								
Cambodia	2,457,569	2,365	17.8	9	70	2	13	6

Source: World Health Organization 2016<sup>39</sup>

The WHO data is not disaggregated by gender, or other demographic information on the victims. Even available literature on smaller scale research samples only provides a glimpse on the gender dimension of the transport environment. Grimm and Treibich's study (2012) based on a

1989-2006 dataset, which covered 21 Indian states and four Union territories, conclude that of the total incidences of traffic accidents, more females were victims as pedestrians and passengers on motorcycles. As women disproportionately walk, rarely drive or have a driver's license, and because on the average their travel distance is shorter – official statistics reveal lower rates of female labor force participation. Related studies also cite that helmet usage is very low among women who are drivers and passengers of two-wheelers (Grimm and Treibich 2012: 928).

Two of the best performing countries since the late 1990s, Sweden and the Netherlands, emphasized an ethical underpinning which should underline all policy: Road deaths and injury should not be seen as a necessary price to be paid for improved mobility (Tingvall 1995 as cited in Von Holst, et al. 2000; Wegman and Elsenaar 1997). They emphasize that transport policy is guided by norms of road safety guided by the motto of Zero Tolerance as the essence of the preventive principle. Two ethical principles underpin Zero Tolerance: (1) Life and health can never be exchanged for other benefits within society (2) Whenever someone is killed or seriously injured, necessary steps must be taken to avoid a similar event. (Tingvall and Haworth 1999: 2) Thus, all road-related fatalities should not be seen as an inevitable fact of life and that priority should be given serious attention, and that zero fatalities are an achievable outcome of strategy implementation (Dann and Fry 2009). It must be noted that during the conduct of these valuable work highlighting the ethical dimension of discussions on road safety, most of this cutting-edge work were still dealing with aggregate data sets as the gender, age and location factors of the preceding work has not been looked into as yet.

The weakness of data collection is well recognized (Constant and Lagarde 2010, Grimm and Treibich 2012, Hyder and Peden 2003). An analysis of research investments worldwide on the burden of disease for several conditions showed that road traffic injuries have been found to be severely underfunded for research investments compared with other health issues such as infectious diseases. The World Bank (2002: 67) traces the policy neglect of transport to the lack of reliable evidence describing the dimensions and extent of transport safety. Available urban transport safety and security data, according to this report, is likely to be biased due to factors such as the reduced ability of low wage earners who are often women, to afford hospital treatment (ibid: 67). In LMICs, the current lack of management capacity for enforcing standards of road safety presents a

difficult challenge. A clearly defined results focus is often absent, coordination arrangements are ineffective, supporting legislation is weak, funding is insufficient, promotional efforts are poorly targeted, mandates are ill-developed, and knowledge transfer is limited (Bliss and Breen 2011).

The lack of data to assess the actual extent of the burden highlights that much remains to be done to investigate the potential solutions (Constant and Lagarde 2010: 101). The absence of research on road crashes is important not only because it makes the issue invisible and minimizes how serious the problem is, but it hinders the search for and selection of appropriate remedies. (World Bank 2002). There are few locality studies on VRUs, much less exploring the intersections of road safety and gender. The studies of Campbell (2004) and Rosén and Sander (2009) forwards that men, more than women, are likely to be victims of road fatalities as pedestrians, attributing this to their higher risk-taking behaviors, and exposure to vehicles with high impact speed. Eluru, Bhat and Hensher (2008) found that men who are 60 years old and above are also more likely to be killed in road crashes than women of the same age group. A case study in Mexico also found that girls under 5 years old and women above 50 years old have a higher risk of dying in motor vehicle-pedestrian collisions. Overall, though, the mortality rates of males in vehicular crashes as pedestrians are much higher than females (10.6 per thousand for males, compared to 4.0 per thousand for females) (Hijar, Kraus, Tovar and Carrillo, 2001). The review of literature reveals mostly macro level analysis of longitudinal statistics, limited to a laborious collection of large amounts of quantitative, empirical data, and thereby contributing to lack of information of the unique context and conditions existing in a specific place as well as the socio-demographic characteristics of those affected. In the Philippines, Verzosa and Miles (2016) noted that before 2008, age and sex-disaggregated data was not always available on road crash statistics from the Metro Manila Accident Reporting and Analysis System (MMARAS). Nevertheless, available data showed the following: fatalities are higher when it involves heavy and multiple motorized vehicles and elderly pedestrians (60 years old and above) as well as those occurring in the evening (7:00 pm to midnight) and late at night (1:00 am-5:00 am), most of the fatal road crashes occur in high-speed, high-traffic volume and multi-lane roads. Generating and using these data, according to the researchers, would greatly enhance policy and planning on road safety, particularly for the vulnerable pedestrians.

There are also few accounts of a consideration of the reality of personal tragedy at the micro level, except for a few journalistic accounts used in road safety campaigns. Grimm and Trebich (2012 :16) recommend more micro data covering information about road users risk attitude, risk knowledge and risk exposure to further enrich analysis. Related to this, it is important to note that it is not enough to take evidence at face value given that the bulk of current research have not gone beyond lengthy descriptions of situations. More often than not, this points to a lack of tools to guide readers in further analysis, or to the absence of a guiding theory for interpretation of causality.

### 5.3 Transport Safety and Security Research in the Philippines

#### 5.3.1 National Level Research: Gaps and Critical Issues

An emerging critical perspective on the state of the art of transport safety and security research may help pave the way for a more comprehensive approach to this field of study. This comprehensive approach has major consequences for issues of social justice in terms of recognizing the vulnerable transport users and their issues, as well as finding channels to voice their concerns. More aggressive policy advocacy for the allocation of resources and privileges in transport planning would help reduce their vulnerability to accidents, disabilities, and fatal injuries.

In the Philippines, focused research on transport safety and security is in its infancy stage with predominant focus on preliminary monitoring of road accidents. There have been attempts, however, over the last decade to align the reporting with ASEAN countries and regional guidelines. The Philippines started to be guided by the “ASEAN Region Road Safety and Strategy and Action Plan (ADB, 2005). Interaction between transport researches in the Philippines with peers at the regional level has been a useful starting point. In 2004, the ASEAN Region Road Safety Strategy and Action Plan was a useful milestone when initiatives of 10 countries using 14 categories were highlighted.<sup>40</sup> Among the fourteen categories listed, the findings on the category on Road safety funding reveal four countries (Brunei, Myanmar, Malaysia, Vietnam) were assessed to be fair and four countries (Cambodia, Indonesia, Laos and the Philippines) were assessed to be poor. Only one country (Singapore) was cited to have a strong commitment to earmark budget for road safety. In addition, for the category

of Road safety research and costing, almost all the countries lack activities except for Singapore and Malaysia. Six ASEAN countries (Philippines, Indonesia, Laos, Cambodia, Myanmar, and Vietnam) were assessed to be poor on Road safety research and costing. Two countries (Brunei and Thailand) were rated as fair. (ibid.)

The road safety assessment of the Philippines is not surprising. Road crash fatalities increase by 4 percent annually on the average since 2006, despite the various policies, programs and plans that have been crafted to address the issue (Worley, 2006). A major gap in intervention planning and implementation is the poor data management on road safety, including underreporting by concerned agencies. For instance, in 2013, the Department of Public Works and Highway reported only 1,513 traffic-related deaths in contrast to 10,379 reported by WHO in the same year. Caleda, et al. (2018) noted that there are various agencies which collect, process, store and disseminate information on road safety, including the Department of Transportation, Department of Health, Philippine National Police, Metro Manila Development Authority, and the Philippine Statistics Authority. However, much is still needed to improve the coordination system among these agencies and strengthening the foundations for evidence-based road policies and programs on road safety. The data published by Department of Health on its Online National Electronic Injury Surveillance System (ONEISS)<sup>41</sup> shows the urgency of road safety: from the last quarters of 2013 to 2018, transport or vehicular crashes was the leading cause of external injuries, more than falls, assaults, or exposure to chemicals (see Table 12) (Department of Health n.d.).

Transport research is also limited. Available national literature related to transport safety and security in the Philippines (Lidasan et al. 2009, Sigua 2008, Vilorio 2000) bring to light research frames<sup>42</sup> which focus on (1) aspects of motorization, and (2) private ownership's technical understanding of transport and urban planning with much emphasis on motorization. There is some confusion about "public transport" as transport afforded by the State with the principle of equity and "public transport" as licensed private transport for public use. Except for emphasis on the economic losses of accidents on the road and the use of some hospital data, available research is silent on the valuable social dimensions of transport safety and security.

**Table 12**  
*Percentage of Injury Cases Recorded by External Causes (2013-2018)*

Injuries by External Causes	Percentage from Recorded Cases					
	Oct-Dec 2013 n=10,698	Oct-Dec 2014 n=11,947	Oct-Dec 2015 n=18,394	Oct-Dec 2016 n=36,757	Oct-Dec 2017 n=34,343	Oct-Dec 2018 n=43,439
Transport / Vehicular crash	33.61	33.97	35.28	32.68	32.84	33.20
Bites / Stings	8.02	10.36	11.37	13.24	15.71	14.30
Fall	18.32	17.13	15.62	1.32	11.32	13.50
Mauling / Assault	17.65	12.40	13.57	12.87	14.30	12.30
Contact with sharp object	13.22	17.99	18.99	14.38	12.82	11.30
Burns	1.60	2.13	2.07	1.60	1.48	1.50
Gunshot	0.71	0.84	1.10	0.84	0.60	0.50
Sexual Assault / Abuse, Rape (incl. alleged cases)	0.04	0.13	0.04	0.07	0.01	0.12
Hanging / Strangulation	0.14	0.13	0.09	0.09	0.04	0.10
Chemicals / substances	0.15	0.24	0.30	0.28	0.19	0.09
Firecracker	0.27	0.19	0.28	0.13	0.07	0.07
Exposure to forces of nature	0.12	0.07	0.04	0.01	0.06	0.03
Drowning	0.01	0.06	0.09	0.06	0.07	0.03
Others	6.14	5.83	3.71	11.62	11.43	9.80

Injuries from vehicular crashes, both fatal and non-fatal, is also the leading cause of injury by external causes in the country from 2013 to 2018 based on the last quarter data from the Online National Electronic Injury Surveillance System (ONEISS) (see Table 12).

An alarming note to the recent available national data is that pedestrians are even listed high on the transport related injuries list by type of vehicle, next to that of motorcycles, confirming global data cited earlier about pedestrians in low and middle-income countries. (Figure 30) The national report does not indicate the gender of pedestrians affected, thus difficult to establish links between gender and road safety and security in the Philippines. It is possible, though, to draw on the findings of other studies on global and regional experience transport, although these are not conclusive. While some studies point to the higher vulnerability of male pedestrians compared to females (WHO 2009, Gören, et al. 2005, Tom and Granie 2011), which is attributed to the males' higher risk-taking attitudes and likelihood to violate pedestrian rules, other studies found no correlation between gender and risk for transport-related injury (Dandona et al. 2008, Moe 2008, Ibrahim et al. 2012). Stoker et al. (2015) observed that gender can influence pedestrian risk, particularly, the performance of gender roles in the public sphere. Drawing from their literature review, they pointed out that women as a group walk more than men in the 45 poorest countries in the world in relation to their housework or reproductive tasks (e.g., carrying water, buying food). The longer time spent by women on the road, often carrying heavy loads, puts them at higher risk for road injuries. However, Stoker et al. also qualified that this needs to be explored further, and more research is needed on gender and transport in low-income countries.

A decade ago, Sigua (2008) discussed Philippine official statistics, lamenting that there was gross underreporting of accidents. Data from the Philippine National Police reports, for instance, were of unlikely proportion to official data from other developing countries.<sup>43</sup> Sigua also decried the lack of directed effort to improve the situation, that is, accidents were generally considered as natural and common occurrences, and that there was no clear understanding of the loss to society of road accidents.<sup>44</sup> Sigua proposed to push for translating commitment through channeling financial resources for road safety programs. He concludes that a policy perspective is absent. Safety must be afforded a high priority in transport policy both by the national and local governments. As to the gender dimensions, it is clear from both monitoring data and available researches that this is largely unexplored, if not totally absent in the case with the published ONEISS data.

**Table 13**  
*Number of Cases of Transport Related Injuries  
 by Type of Land-Based Vehicle (2013-2018)*

Type of Vehicle	Percentage from Recorded Cases					
	Oct-Dec 2013 n=3,557	Oct-Dec 2014 n=4,058	Oct-Dec 2015 n=6,489	Oct-Dec 2016 n=12,014	Oct-Dec 2017 n=11,279	Oct-Dec 2018 n=14,440
Motorcycle	57.58	57.27	62.38	50.27	58.33	61.59
None (Pedestrians)	15.41	13.58	9.55	9.71	9.54	10.08
Tricycle	5.65	8.92	6.01	5.50	4.42	3.99
Bicycle	3.06	2.88	2.91	2.02	2.23	2.47
Van	2.22	1.75	0.91	0.11	0.96	0.06
Car	1.27	2.56	2.00	0.19	1.61	1.70
Jeepney	no data	no data	1.11	1.22	1.14	0.92
Bus	0.45	0.44	1.00	0.21	0.36	0.19
Truck	no data	0.34	0.37	0.64	0.32	0.46
Unknown	11.36	9.29	13.16	26.55	14.59	16.60
Others	3.01	-	0.57	0.62	0.43	-

Source: Department of Health, n.d.

The key points of this section are first, there is a relationship between income level and road traffic injuries which is revealed in data from cross-cultural studies across various countries which use level of national income as basis for comparison. Explicit ethical concerns on safe transport reflect that these have affected differences in the level of fatalities in the various countries with different level of incomes and different expression of ethics of their policies. It is safe to conclude that having resources is not a sufficient condition for transport security and safety. Explicit ethical considerations in national policy are a very significant factor which influences people's safety and security in their transport environment.

Secondly, gender dimensions of transport environment are beginning to gain public attention all over the world. While the database is insufficient to draw general conclusions, there are already specific gender-features which can be observed from the existing data base. These include



mixed modality, i.e., walking and the use of public transport is found to be more common among women therefore assessing transport accident cannot be restricted to the use of motorized vehicles alone. It is also crucial to look closely and carefully into the transport environment in which motorized vehicles are being handled as well as the individuals behind the wheels. This way, the ground is set for raising the validity of the “gender structure of the transport environment.”

The next section uses field findings from Davao city to offer new ideas on how transport planning based on a new understanding of social equity as equal distribution of a “safe space” for transport users in spatial planning may help advance the goal of transport justice.

### 5.3.2 Davao City Amidst Motorization: Police and Hospital Accident Records

The global and national situation provides the setting for bringing in what can be gleaned from looking further into the local. In Davao City, various sources of data including police and hospital accident records, surface insights not revealed in any available local research. In 2001, Davao City was reported, to have the highest motor vehicle density in the region at 51 vehicles per kilometer of road. Contrary to claims in traffic management reports that the number of vehicular accidents has decreased, annual data on the same data do not support this (Table 14). Yet transport officials attribute a large part of the felt traffic improvement to the installation of traffic signalization at major intersections of the central business district.

While the number of vehicular accidents is reported to not have increased (Table 14) in the past five years, reported cases reveal that the number of physical injuries or people affected by vehicular crashes during the same period presents cause for alarm. (Table 15). There is no available gender disaggregated data on traffic accidents in the police records.

A closer look at available records shows how physical injury cases almost doubled during the ten-year period. This underscores how safety is a crucial transport-related environmental problem in the city but is not given the attention it deserves (Figure 32).

**Table 14**  
*Vehicle Accidents in Davao City C.Y. 1999-2007*

Year	No. of vehicle accidents
1998	4,601
1999	5,202
2000	3,397
2001	5,496
2002	4,801
2003	3,420
2004	3,806
2005	3,795
2006	4,103
2007	4,621

Source: culled from Statistics on Vehicular Accidents, Davao City Police Office Reports

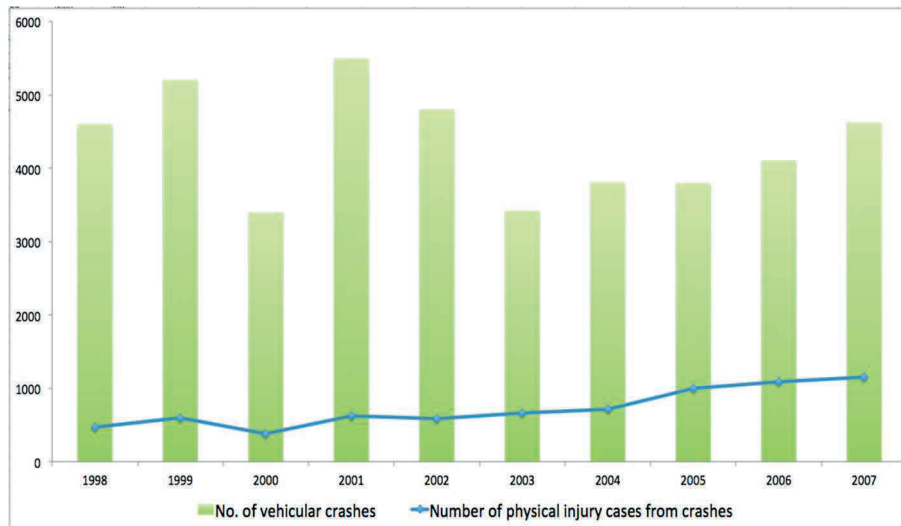
**Table 15**  
*Physical Injury Cases in Vehicular Accidents*

Year	Number of cases
1998	462
1999	597
2000	379*
2001	617
2002	579
2003	658
2004	708
2005	998
2006	1,085

\* (Jan-Aug only)

Source: Statistics on Vehicular Accidents, Davao City Police Office C.Y. 1999-2008

**Figure 32**  
**Vehicular Accidents and Physical Injury Cases**



Parallel to the above, hospital records in Davao Doctors Hospital, located in the central business district, reveal that approximately 80 per cent of the cases in emergency room records were vehicle related accidents (Table 16). The remaining cases were from gunshot wounds, mauling, stabbing and bombing-related cases.

Personal accident experiences were shared by several respondents of the random sample survey of this study.<sup>45</sup> Some respondents were injured as passengers during these accidents: “Two years ago, the multicab I rode was bumped by a PUJ,” or “My back was injured when the PUJ I was riding was bumped by a car,” “The tricycle my wife and I were riding was hit by a jeep,” “I had minor injuries for both accidents I had on the motorcycle which was hit by SUVs,” “The motorcycle I was riding was hit.” Some respondents shared specific accident experiences as pedestrians: “I was walking, a delivery truck hit me and I hit my head badly on the street,” while another said that “I was walking and a motorcycle hit me.” “*Naka-bangga ng tao ang sinasakyan*,” [A pedestrian was hit by the vehicle I was riding -author’s translation] One related the experience of her child: “A private car hit my son who was hospitalized.”

**Table 16**  
Emergency Room Admissions 1998-2007 Davao Doctor's Hospital

Year	Total Cases	No. of road accidents	Road accidents as % of total	No. of Non-road accidents	Non-road accidents as % of total
1998*	170	136	80.0	34	20.0
1999	319	279	87.4	40	12.6
2000	298	255	85.5	43	14.5
2001	370	315	85.1	55	14.9
2002	336	270	80.3	66	19.7
2003	338	261	77.2	77	22.8
2004	267	204	76.4	63	23.6
2005	163	118	72.3	45	27.7
2007*	166	121	72.8	45	27.2
TOTAL	2,427	1,959	80.7	468	19.3

Source: Emergency Room Admissions Logbook, Davao Doctor's Hospital, Davao City, July-Dec 2007 only.

### 5.3.3 Gendered Beliefs about Safety and Security: Attitudes and Preferences towards Transport in Davao City

Findings from the random sample survey in Davao City show that, ironically, the majority of the respondents from both genders did not consider their travel to and from work as dangerous at all. In other words, unsafe transport standards seem to have been accepted as a way of life. Nevertheless, when asked about the actual safety-related conditions experienced by people in the three districts of the city, 86.8 per cent of all respondents considered sidewalks to be a very important means of avoiding traffic accidents.

On the topic of personal security, unlike the survey, the in-depth interviews of the subsample capture this invisible nuance:

Every day, Julienine, 24 years old, spends an hour commuting using authorized public transport modes, such as the jeepney and the multicab, to reach her workplace; Davao Doctor's Hospital in District 1 located less than 10 kilometers away from her home in Nova Tierra, Lanang. Julienine

shares her experiences as a public commuter on matters of security: “During one jeepney ride to work, another passenger pointed a gun at me and demanded for my cellphone. Nobody inside the jeepney dared to stop him because he had a gun.” After this experience, Julianne fears traveling at night. She also feels very stressed about commuting with reckless drivers on the wheel, especially at night.

*“Pati yung pagbibiyabe na nag-iisalang akong babae sa jeep ay nakakapagbigay ng stress sa akin.”* [Traveling alone and being the only woman in a jeep at night is a source of great stress for me -author’s translation.]

While Julianne talks about the stress of night travel, Marlyn, a 45-year-old teacher at the Bernardo Carpio National High school in Buhangin, recounted experiences related to security in her intra city travel as a pedestrian. Despite almost all areas in downtown Davao City having pavements for pedestrians, she recalls three traumatic incidents she personally experienced: a bag snatching incident while walking with her mother in Barrio Obrero, a cellphone snatching incident while walking on the premises of University of Mindanao in Bolton, and another cellphone snatching incident while walking with her co-teacher. For Marlyn, there are places in the city notorious for criminal incidents such as Carpenter Street near Mag-saysay Park in Agdao. Marlyn only travels short distances within the city. She does not want to travel long distances by land because this is very stressful for her. She also never travels alone. Despite these experiences, Marlyn does not consider traveling in Davao City as dangerous.

The third experience is of Luzvina or “Bebet”, 36 years old, a solo parent with two children aged 12 and 9, claims that a source of stress for her are drivers who drive too fast.

*“Lalo na mga L300 na aircon from Calinan to downtown. Wala kang magawa kasi ganun talaga mabilis sila magpatakbo, yun nga lang madali ka rinmakakarating sa pupuntahan mo. Kaya ngamarami din sa nag-aabang ng L300 na sasakyan sa aminkasi din hindi siya masyadong nagpipick-up ng mga pasahero sa daankasipuno na siya bagoumalis ng terminal sa may Calinan. Nakakasakaylang kami dyan kung may babababagodumating sa Mintal, siyempre may vacant seats na. [We cannot do anything about the L300 air-conditioned vans which are used as public transport from Calinan to downtown. That’s how they are, the drivers go really fast. Well, at least you get to where you want to go fast, too. The very reason why many people also ride these vans is because the vans do not stop along the way to pick up other passengers as they are already full of passengers when they leave the terminal. We are only able to board an*

L300 vehicle if a passenger happens to get down along the way to Mintal and there is a vacant seat. -author's translation]

Manang Delsa, born in Davao City, and has lived there for 60 years, relates two distinct experiences in her life in the city related to travel safety and security:

*“Pinupuntahan ko si mama sa palengke nang mag-isa lang ako. Sumakay ako noon ng jeep, ako na lang ang naiwang pasahero. Nagtaka ako nang biglang huminto ang driver sa may liblib na part ng daan, walang ilaw. Sabi ng driver nasira daw ang makina kaya’t kailangan niyang tignan. Bumaba siya pero sa akin siya papalapit sa back seat hindi sa may makina. So ang ginawa ko tinulak ko siya, nang makalabas ako ng jeep, kumuha ako ng bato at pinukol ko sa kanya saka ako tumakbo. [I used to go to my mother at the market. I was traveling alone. Once I rode a public jeepney, I was the only passenger inside. I wondered why the driver suddenly stopped by the roadside in a dark isolated area. The driver said that something was the wrong with the jeep and that he had to check it out. He got out of his seat but instead of going in front of the vehicle to check the motor, he was heading toward me. What I did was I pushed him and when I was out of the vehicle, I picked up a stone and threw it at him, and then I ran away as fast as I could. -author’s translation]*

The second incident shared by Delsa was when she was around 30 years old. It was around 3:00AM and she was waiting for a jeep at the terminal. A taxi pulled up to where she was. There was a Caucasian passenger inside. He asked her, “How much?” which meant he mistook her for a prostituted woman waiting for customers. Manang Delsa’s immediate reaction was anger. She drew a cleaver knife from her bag and screamed at the man, “You want this?” The taxi sped away.

How else does safety and security figure in the beliefs and values of the people in the city? Table 17 presents specific values of male and female respondents on transport along several dimensions such as price, time use, safety, security and comfort. The percentages refer to the share of males or females who ranked the particular item as number 1, 2 or more.

**Table 17**  
*Gendered Values on Transport*

VALUES ON TRANSPORT	M %	RANK	F %	RANK
<b>Security</b>	92.1	1	96.70	1
Streetlights at night	92.1		96.70	
<b>Safety</b>	87.97	3	85.87	2
Safe driving of Public transport drivers	95.5		91.7	
Safe brakes, lighting, machine condition	96.1		92.2	
Sober Drivers	89.9		90.6	
Separate lanes for NMT	77.0		79.4	
Safe sidewalks	88.8		82.8	
Zebra crossings for pedestrians	92.7		92.2	
Pedestrian Overpasses	75.8		72.2	
<b>Comfort</b>	74.7	2	70.98	3
Public Transport is not overcrowded	69.1		68.9	
Improvement of exiting footpaths & roads	84.8		76.1	
Protection from rain & weather at transport stops	84.8		76.1	
Ban baring music/noise on public transport	60.1		62.8	
<b>Price</b>	68.5	4	67.65	4
Cost of fare	77.0		73.3	
Discounted fare for commuters	60.0		62.0	
<b>Time Use</b>	66.3	5	60.8	5
Provide Transport Services where I live	65.2		54.4	
Improve access to NMT	61.8		61.1	
Improve existing footpaths	75.3		67.8	
Proximity of transport stops	62.9		60.0	

The survey results show that security and safety are the highest concern of both male and female respondents compared to values related to price, time use and comfort. Safety encompasses several specific elements which

were indicated to be the most valued by both female and male respondents. Of all seven elements under the safety category, female respondents indicated highest rating of “Zebra crossings for pedestrians” and “Safe public transportation—brakes, lights and machine condition.” For male respondents, “safe public transportation—brakes, lights and machine condition ranked the highest, followed closely by “Safe driving of public transport drivers”.

Security is the highest of all the transport concerns of almost all respondents, regardless of gender, compared to other transport related concerns of price, time use and comfort. Both genders also ranked price lower compared to safety and security. Comfort, compared to safety, ranked higher among males. The lowest ranked concern compared to safety and security – for both males and females – is time use. A study of seat choice, front or back, of solo taxi passengers found that a significantly greater number of men than women sat next to the driver in large urban areas, but that no sex difference in front-seat choice appeared in smaller communities. Very few women taxi drivers were observed. (Watson and Kearins 1988) The data were interpreted in terms of sex differences in feelings of security, with solo women feeling more vulnerable than men, particularly in large cities.

A relevant set of questions that has emerged from the findings which scrutinizes: who is harmed by traffic accidents, or how traffic accidents are socially distributed, what are the main mechanisms and consequences from the perspective of transport justice? There are no official data in the transport policy documents of Davao City to ascertain facts about the type of people harmed by the record of traffic accidents. Police records of accidents were not woven in planning decisions of the short, medium and long-range transport documents studied. Nevertheless, information of this research culled from the medical records and emergency logbooks of one centrally located hospital may pressure more systematic research in the future to stress the urgent need of the importance of transport safety in the lives of people in the city.

Table 18 shows the same data disaggregated by income group.



**Table 18**  
Gendered Values on Transport by Income Group

Values on Transport	Lower Income Males	Lower Income Females	Higher Income Males	Higher Income Females	p-value
Security					
Streetlights at night	91.4	94.4	93.5	98.8	0.149
Safety					
Safe driving of Public transport drivers	91.4	88.9	100	94.0	0.033*
Safe pub trans-brakes, lighting, machine condition	93.5	87.8	100	96.4	0.006*
Sober Drivers	83.9	83.3	96.1	97.6	0.001*
Separate lanes for NMT	75.3	72.2	81.8	86.7	0.034*
Safe sidewalks	86	75.6	90.9	90.4	0.013*
Zebra crossings for pedestrians	89.2	88.9	97.4	95.2	0.078
Pedestrian Overpasses	77.4	73.3	77.9	72.3	0.739
Comfort					
Public Transport is not over-crowded	63.4	61.1	77.9	79.5	0.002*
Improvement of existing footpaths & roads	78.5	65.6	92.2	86.7	0*
Protection from rain & weather at transport stops	77.4	76.7	94.8	92.8	0*
Ban blaring music/noise on public transport	61.3	54.4	61.0	69.9	0.141
Price					
Cost of fare	77.4	74.4	75.3	73.5	0.997
Discounted fare for commuters	52.7	56.7	66.2	69.9	0.028*
Time Use					
Provide Transport Services where I live	62.4	53.3	68.8	59.0	0.15
Improve access to NMT	65.6	50	59.7	69.9	0.014*

Values on Transport	Lower Income Males	Lower Income Females	Higher Income Males	Higher Income Females	p-value
Improve existing footpaths	74.2	58.9	77.9	77.1	0.004*
Proximity of transport stops	55.9	57.8	71.4	61.4	0.141

\* with significant differences  $p > 0.05$

While Table 18 shows only minimal difference between the responses of females and male within their income groups, the additional information provided by the respondents in the survey on what stresses them in their travel within the city contextualizes their responses toward a more nuanced differentiation. The subsample also reveals women's experience with regards to safety:

Rosario, separated from her husband, has three grown up sons aged 21, 23 and 25, the latter two already living independently. She and her youngest son share the daily household chores. In 1990, Rosario with her then two-year-old child, had an accident while on the motorcycle she was driving. The accident happened in front of the market. Vehicles were on crawling pace as traffic in front of the market was very heavy. Suddenly, a truck drove so fast from their behind, ramming into her motorcycle.

*Biglang umandar ang medyo mabilis na truck na nasaaming likuran kaya't kami ay napatitilapon. Nang kami matumba, parang umikot ang aming motor at nakitakong papunta sa aking anak ang isang gulong ng aming motorcycle, tumilapon kasi siya papalayo sa akin. Kaya't pinilit kong gumapang para maabot at maprotektahan ang aking anak. Buti na lang nababol ko pa, nakuha ko ang akin anak. [A fast-moving truck bumped into us so my son and I were suddenly thrown off our motorcycle. My son was thrown off away from me. I saw that our motorcycle was skidding toward my son. I forced myself to crawl quickly to him. Luckily, I reached him in time. uthor's translation]*

Rosario relates that when they went to the police station to talk to the driver of the truck, she asked him his driver's license and other documents and he could not show them anything. She had all her official documents ready and complete. The owner of the truck came into the station and was telling her that they would pay for everything. She told the owner, "*Pag binayaran mo kami, para na rin naming binenta ang aming sarili.*" [If I accept your money that is just like saying we have sold ourselves. -author's translation]

The preceding quote of Rosario illustrates how she insists that her safety cannot be bought.

Rosario believes that the changes in the city she has observed through the years have brought about some amount of convenience in terms of mobility of the citizens. Asked if she sees these changes as positive or negative, “*Positibo. Marami nang puwedeng sakyan, hindi na ikaw ang maghababol sa sasakyan, sila na ang maghababol sa ‘yo.*” [These changes are positive. There are many transportation modes to choose from. You do not need to chase after your ride anymore. Now it is the drivers who are convincing you to ride. -author’s translation]

As with the survey of their beliefs and values, the responses are the same: the experience of traffic, non-availability of public transport at certain hours and in certain areas, reckless and rude drivers and overcrowded public transport are experiences not unique to women or to men. However, a closer look at the responses also revealed that females, more than males, feel more vulnerable or threatened by acts of violence directed at their gender, that is, sexual harassment. Sexual harassment is disproportionately experienced by females than males. This refers mostly to physical (e.g. touching, being pinched in the buttocks) and verbal (e.g. catcalls) forms. A form of sexual harassment particular to females is being targeted by flashers (men who show their genitals in public places and takes pleasure in the shocked reactions of their audience) in public transport. One woman also narrated being mistaken by a foreigner as a prostituted woman. The woman was able to stop his harassment by brandishing a knife which she carries for protection (because she often leaves the house for work at dawn). Another woman also reported carrying a small knife wherever she goes because of a traumatic experience she had when she was only 10 years old and was almost raped by the driver of the jeepney she took to go home.

Sexual violence is also an underlying fear when women report feeling uneasy traveling late in night, passing through areas deemed unsafe or notorious for violence (both when riding a public vehicle or walking), and non-lighted streets. The presence of neighborhood gangs in streets leading to their houses was also linked to sexual harassment. Apart from the concern of having their pockets or bags picked, women are also concerned about being sexually harassed when in overcrowded vehicles or jostling with other people to get a ride.

One male respondent acknowledged the vulnerability of women to sexual harassment in their area. At the time, the place where they lived was not so populated and the nearest transport stop was a few minutes' walk. According to him, he accompanies his wife whenever he can when she has to go out to protect her from possible harassers.

More males are stressed by factors not necessarily gender linked. Their top responses include reckless drivers, bad road conditions, weather and pollution. Male respondents also reported sexual harassment (ranked 5<sup>th</sup>) although in significantly less numbers than females.

In May 2019, the Philippine government passed the Safe Spaces Act, a national law that penalizes sexual harassment in public spaces such as streets, public utility vehicles and transportation terminals.<sup>46</sup> This law, in effect, expands the coverage of the Anti-Sexual Harassment Law of 1995 which only penalized sexual harassment in the context of work or education (e.g., asking for sexual favors in exchange of work promotions or better grades) (Republic Act 7877). It is also specific that sexual harassment is a form of gender-based violence, not limited to women as targets of this violence, but also members LGBTQIA++<sup>47</sup> community. Acts of gender-based sexual harassment are considered criminal offenses and are punishable by imprisonment, fines, or both, depending on the gravity of the act committed. On Section 6 of the law, it defines the penalties for sexual harassment in public utility vehicles, to wit:

In addition to the penalties in this Act, the Land Transportation Office (LTO) may cancel the license of perpetrators found to have committed acts constituting sexual harassment in public utility vehicles, and the Land Transportation Franchising and Regulatory Board (LTFRB) may suspend or revoke the franchise of transportation operators who commit gender-based streets and public spaces sexual harassment acts. Gender-based sexual harassment in public utility vehicles (PUVs) where the perpetrator is the driver of the vehicle shall also constitute a breach of contract of carriage, for the purpose of creating a presumption of negligence on the part of the owner or operator of the vehicle in the selection and supervision of employees and rendering the owner or operator solitarily liable for the offenses of the employee. (Republic Act 7877, Section 6).

## 5.4 Conclusion

This chapter has shown the major progress in transport research globally and the importance of understanding “equity” in transport not just from

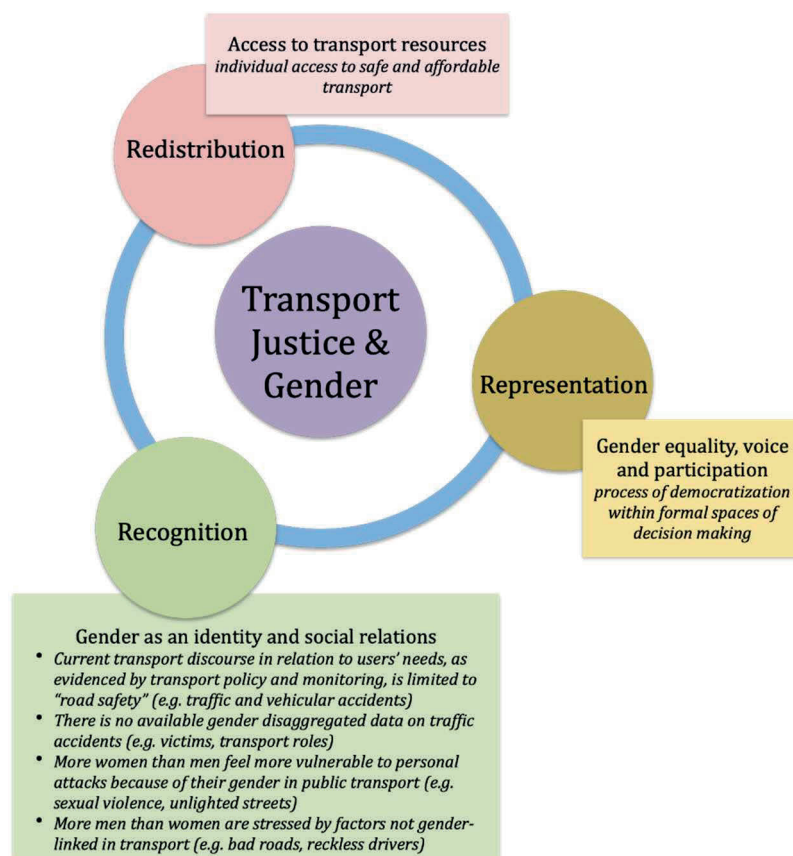
the perspective of access, but also from the perspective of the social distribution of crashes among certain groups of vulnerable users as an indicator of bias in transport planning.

Large studies on urban transport crashes (WHO 2009, WHO 2018c) are useful in revealing that they do not happen only due to human behavior but are also related to spatial planning or lack thereof. Country-based studies reveal a clearer set of dynamics such as identifying the vulnerable locations, the types of accidents, types of persons involved as the basis for road safety designs.

In the Philippines, transport studies there is a glaring neglect of the social dimension of issues, which would be very useful to provide answers to the specific forms of vulnerability to traffic accident faced by vulnerable social groups and involving motorized vehicles. Most people have come to treat road safety as a matter of statistics, quibbling on the number of people killed or maimed, and doing little more to ensure that the roads are made safer. Davao City could do well to change course and devote itself to its traditional constituency of the less affluent road user. The need for broad footpaths, pedestrian facilities to cross the arterial roads at the rate one every 200 meters and in the short term, signals for surface crossing of pedestrians. Without these, Davao city will only be a standing example of motoring madness, governmental indifference, and even incompetence, benefiting the maximum number of people but likely missing out on the specific needs of the vulnerable. Ideas and innovations must be given space and place to flourish so that limited time and funds is used to maximum advantage of the vulnerable.

Attention to the local politics of spatial planning, socially embedded in layers of local power relations, is needed to expose the mechanisms of framing “transport safety” as a condition, the inclusion and exclusion of aspects of “vulnerability” among users. Beyond the goal of reducing accidents and injuries, which incur economic and social costs to individuals and their families, standards of transport justice should be embedded in spatial planning at the community level. Beyond the notion of safety as a set of technical issues, there is a wide range of subjective meanings that are locally specific and may have further implications for movement in the city as a key aspect in social participation.

**Figure 33**  
Summary of Findings: Recognition



## Notes

<sup>32</sup> Parts of this chapter are drawn from the author's previously published work (Rivera 2010)

<sup>33</sup> WHO is the lead agency – in collaboration with the United Nations regional commissions – for road safety within the UN system. WHO chairs the United Nations Road Safety Collaboration and serves as the secretariat for the Decade of Action for Road Safety 2011–2020. Proclaimed through a UN General Assembly resolution in 2010, the Decade of Action was launched in May 2011 in over 110 countries, with the aim of saving millions of lives by implementing the Global Plan for the Decade of Action. WHO also plays a key role in guiding global efforts by continuing to advocate for road safety at the highest political levels; compiling and disseminating good practices in prevention, data

collection and trauma care; sharing information with the public on risks and how to reduce these risks; and drawing attention to the need for increased funding. (World Health Organization 2018)

<sup>34</sup> The use of the term motor or vehicular “accidents” in international literature, including the WHO 2008 standard categorization as a transport-related health issue, is a point of discussion. Stewart and Lord (2002), for instance, asserts that the term “crashes” is a more accurate word. It covers a wider range of causes of the phenomenon, including those which are intentional, thus not accidents per se. According to them, crashes due to the driver’s intoxication, speeding or carelessness are not accidents. (See also Blanchard, et al. 2003, for a counter response to Stewart and Lord’s assertion on accidents versus crashes).

<sup>35</sup> It is projected that around a cumulative total of 5 million lives, 50 million serious injuries and US\$ 5 trillion could be saved with the conscious efforts of nations to address road safety issues – an issue which the Decade of Action directly targets. See also Decade of Action 2011-2020 document (World Health Organization, 2018). Prior to the 2010 General Assembly resolution, global road safety has been the subject of several the United Nations resolutions starting 2003; the latest was in 2018 (United Nations World Safety Collaboration, n.d.). There are also the UN legal instruments related to traffic and road safety such as the 1949 Convention on Road Traffic, the 1968 Convention on Road Traffic, the 1968 Convention on Road Signs and Signals, the 1958 and 1998 agreements on technical vehicle regulations, the 1997 agreement on periodic technical inspection of vehicles and the 1957 agreement on the transport of dangerous goods, in facilitating road safety at the global, regional and national levels (as cited in UN General Assembly (18 April 2018). Improving global road safety (A/72/271). Retrieved from <[https://www.un.org/en/ga/search/view\\_doc.asp?symbol=A/RES/72/271&referer=/english/&Lang=E](https://www.un.org/en/ga/search/view_doc.asp?symbol=A/RES/72/271&referer=/english/&Lang=E)>.

<sup>36</sup> According to the World Health Organization (2013) traffic crashes will be the third leading cause of disability and years of life loss by 2024. In countries such as the USA, traffic crashes is already among the top three causes of disability.

<sup>37</sup> This pattern remained unchanged as noted by the World Health Organization on its 2018 report, “Road Traffic Injuries: The Facts”. Retrieved from <[https://www.who.int/violence\\_injury\\_prevention/road\\_safety\\_status/2018/infographicEN.pdf?ua=1](https://www.who.int/violence_injury_prevention/road_safety_status/2018/infographicEN.pdf?ua=1)>.

<sup>38</sup> Presentation of Anthony Bliss, Lead Road Safety Specialist and Manager, Global Road Safety Facility of the Energy, Transport and Water Department, Sustainable Development Network, the World Bank during the International Conference on Road Infrastructure Safety of the European Bank for Reconstruction and Development, London 2008 July <[www.fiafoundation.org/Documents/Road%20Safety/anthony\\_bliss.ppt](http://www.fiafoundation.org/Documents/Road%20Safety/anthony_bliss.ppt)> accessed October 13, 2013.

<sup>39</sup> Data used in this table is from the interactive map (World Health Organization 2016).

<sup>40</sup> The fourteen categories which guided the qualitative assessment of current initiatives are the following: (a) Coordination & Management, (b) Road Accident Data Systems, (c) Road safety Funding, (d) Safety Planning & Design of Roads, (e) Improvement of Haz-



ardous Locations, (f) Road Safety Education of Children, (g) Driver Training and Testing, (h) Road Safety Publicity Campaigns, (i) Vehicle Road Worthiness & Safety Standards, (j) Traffic Legislation, (k) Traffic Police & Law Enforcement, (l) Emergency Assistance (m) Road Safety Research & Costing, and (n) Cooperation & Collaboration. Sigua (2008) said that the qualitative assessment of the 10 ASEAN countries concerning current initiatives on how to improve the road traffic safety situation was largely based on the opinion of several respondents on the questionnaire administered by Consultants of the Asian Development Bank during workshops held in each respective country. The lineup of categories or sectors was initially identified based on the ADB Guidelines. Except for Singapore and Malaysia, almost all the countries lack activities in each sector that would help improve road safety.

<sup>41</sup> ONEISS is the Online National Electronic Injury Surveillance System which is published by the Department of Health of the Philippines with the following entities National Epidemiology Center, Information Management Service, National Center for Disease Prevention and Control, National Center for Health

<sup>42</sup> Frame consists of a mental model which becomes a filter through which an issue, topic or situation is observed, and a research problem is defined. Frame can facilitate understanding or confuse an issue, especially when the values behind the perspectives are assumed rather than openly discussed.

<sup>43</sup> This refers to the comparative qualitative assessment of the 14 (Asian Development Bank 2005).

<sup>44</sup> The use of conventional economic indicators has been found to have many limitations with dangerous implications. Foremost is how the literature highlight how critical emphasis must be placed on the principle that safety is a necessity rather than a luxury, and that currently dominant conventional methods of cost benefit analysis tend to see it as a luxury.

<sup>45</sup> Out of the 350 respondents, 123 respondents (35.14%) shared their negative experiences as a commuter or driver in Davao City. This was noted in the survey forms.

<sup>46</sup> As defined under the law, public spaces include “streets and alleys, public parks, schools, buildings, malls, bars, restaurants, transportation terminals, public markets, spaces used as evacuation centers, government offices, public utility vehicles as well as private vehicles covered by app-based transport network services and other recreational spaces such as, but not limited to, cinema halls, theaters and spas...”

<sup>47</sup> Lesbian, gay, bisexual, transperson, queer, intersex, asexual, and others.



## 6

# Transport Justice, Gender, Class, Age and Disability

The past two decades have seen significant developments in transport and transport planning, foremost of which is the shift from motorization and facilitating people's access to motorized vehicles to a broader perspective on transport that highlights people's mobility, whether through motorized or non-motorized modes, and the extent which this process of movement facilitates personal empowerment and local and national development. People move in public spaces for various reasons: for learning, livelihood and employment, and recreation; to access goods and services; or to assert their rights.

Transportation is more than just a technological concern; what is central are people's aspirations which are also intertwined with a country's development goals. When transport is grounded on people's experiences, it becomes more nuanced and responsive to their needs. This in turn has implications on how the idea of transport and development is envisioned and implemented, that is, not primarily considering "First World" technocratic standards but rather one which is contextualized in the user's realities – their geo-political location, resources, capabilities, and their way of life.

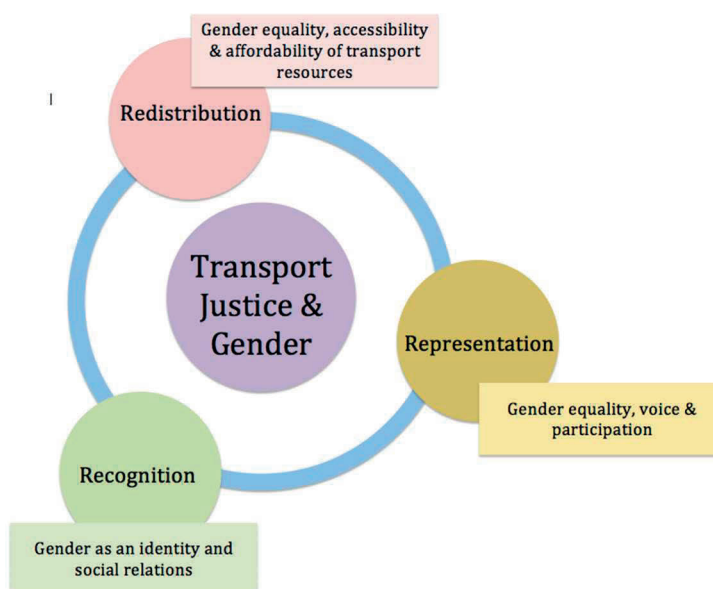
This shift is yet to gain traction in many contexts, and even when it did, it has not automatically translated to better conditions and modes of mobility in public spaces for certain groups, particularly those already marginalized on the basis of their gender, socio-economic class, ethnicity, age, geographic location, and (dis)abilities, among others. To ask which groups' experiences and perspectives in transport planning are considered or given most weight is still relevant, and transport justice is concerned about this. Transport justice, as expounded in this study, highlights (1) the concrete reality of unequal distribution of transport resources, such as safe modes of transportation, public infrastructure, as well as real options for transport which considers factors such as the users' financial and cultural

context; (2) the inequality of representation, if not invisibility, of certain transport users, in the discourse of transportation, which is often tied to the other forms of discrimination that these groups face; and (3) the cultural and structural barriers to recognize the needs of these groups and therefore the importance to engage these groups. Transport justice, at its core, is about inclusivity in development. Transport justice seeks to integrate the various experiences of users so that transport modes, infrastructure and systems are responsive to their needs at the personal level and to addressing the gaps in transport planning and implementation at the macro level.

Women are one of the most invisible groups in transport, owing to its largely technological and male-oriented framing that is, transport as motorization and infrastructure facilitating motorized transportation. This is true even when women participate in transport studies because frameworks employed by these studies often assume “gender neutrality” thus de-contextualizing the use and appreciation of transport by women and conflating it with those by men. Worldwide, transportation issues are often perceived from the male experience: Men are comprising the majority of motorized vehicle owners and drivers, and most at-risk of being victimized in vehicular crashes. However, when a gendered perspective is applied and the interface of transport and mobility in a public space is broadened beyond motorization, women’s realities surface: distance, time and effort spent to perform (gendered) productive and caring tasks vis-à-vis access to transportation; women’s use of non-motorized and unregulated public transport; and personal security as pedestrians in the male-dominated public space. This “public space” is not just a neutral physical area where movement takes place; it is also defined by social and cultural factors and relationships played out in that area: How are women viewed and how should they navigate the space? And how are children and the elderly considered in transport systems? Just as independent, autonomous individuals or also as people with special needs? And what about those with disabilities? In addition, social class matters, as I have demonstrated in this thesis. Low-income city dwellers do not necessarily have less transport needs than high-income people, but are limited in their options for means of transport, safety and security, and travel time. A second critical idea in the concept of public space in transport is the visibility, representation and direct participation in transport planning and decision-making arenas of

women, young and old, lower-class persons, the disabled and ethnic minorities, especially those formally vested with authority to shape systems for movement in physical areas, and the transport discourse itself.

**Figure 34**  
*Key Concepts Review*



The study's framework on transport justice, intersecting with gender justice, taken as intersectional, builds on three concepts: redistribution, representation, and recognition.

## 6.1 Main Empirical Findings: Interface of Transport Planning and Gender

### 6.1.1 Redistribution: Experience of Transport with a Gender Lens and Intersectionality

The current tide of the development discourse is focused on Redistribution. Yet this is only one part of Transport Justice. As the dominant discourse praises motorization and infrastructure, the patterns of women's experiences are left invisible and absent.

Five important findings about gender equality, affordability and accessibility of transport resources unfolded in the study.

- Authorized and unauthorized transport are available in the city.
- More low-income users take unauthorized modes of transport compared to higher income users
- Women spend more time in travel, have more trip legs and lower income women spend more of their income on transport than men.
- More women take a combination of different transport modes, including walking, which entails less expense in terms of money spent, compared to men who take expensive but direct modes of transport.
- Even though women's incomes are on average lower than men's more women take authorized transport modes than men.

Multimodality reflects Davao City transport modes. There are more than a dozen intra-city land transport modes found in several legal and "illegal" sites serving as terminals. This study chose to consider the modes of transport in Davao City in terms of "authorized" or "non-authorized" public transport modes. The various modes of transport used by its citizens may be categorized into five types. (1) walking, (2) pedal powered non-motorized transport, (3) unauthorized public transport (4) authorized public transport, and (5) private motorized transport.

Results of the study revealed that on each trip a person makes, she or he utilizes various combinations of transport modes ranging from zero (walking) to twelve modes in a single journey. For each trip, a person has different transport roles — as pedestrian, passenger in a vehicle or driver of the vehicle. The study confirms the dynamics of the multi-modality of transport in Davao City, the diverse conditions in which women travel, and their gendered roles and socio-economic status.

Most of those who travel for less than an hour are lower income males while most of those who travel for more than 1.5 hours are females. Related to this statistic, it was observed that it is not always the distance from the point of origin to destination that determines the time needed to commute. Several factors such as the route of the public utility vehicle, traffic, number of transport mode transfers, and the time of travel are considered. To illustrate, consider the experience of Mary Ann who spends 45 minutes

to reach school from her house, although the school is only two kilometers away. She leaves her house at 4:00PM to attend her night classes, which end at 8:00PM. Mary Ann's commute is only 15 minutes less of Julienne's travel time to her work. Julienne, a nurse whose workplace is around 10 kilometers away from her house, works from 3:00PM to 11:00PM.

People in the lower income groups have fewer trip legs (2-4) compared to the higher income groups with males having more trip legs than females. On the other hand, people in the higher income groups take more trip legs (8 or more) with females having slightly more trips than males. Around 40 per cent of those whose travel cost is less than 10 per cent of their income belong to the higher income female group. Around 67 per cent of the higher income females have travel costs that are less than 10 per cent of their income. Similarly, the majority of the higher income males and lower income females have travel costs of less than 10 per cent of their income (45% and 37% respectively). There are 28 per cent of the lower income males who have no travel cost while 27 per cent have travel cost less than 10 per cent of their income.

In my research, travel cost as a percentage of income reveals some insights. On the average, the lower income male and female groups have shorter travel time and less number of trip legs in their journey to and from their workplace. However, the relative cost of their transportation to their income is higher. There are those who spend upwards of more than 20 per cent of their income on transport costs while most lower income earners' transport expenses make up less than 10 per cent of their income. There are more people in the lower income groups whose travel cost is more than 20 per cent of their income than people in the higher income groups. Slightly more lower income women than lower income men spend more than 20 per cent of their income on transportation. Possible explanations for this trend may be attributed to (1) lower income women's travel route entails more switches of transport modes, and (2) they stop at more places on a single trip. Interviews with women also show that their reproductive tasks also entail bringing their children along in some parts of their trips, thus doubling the travel cost.

Within groupings according to gender and income, it is observed that in the lower income group, there is an almost equal percentage of women who make no trips at all (meaning they walk to their workplace), and women who have 2 or more trip legs en route to their workplace on a single trip. On the other hand, the greater percentage of higher income

women have 4-5 trip legs in the same circumstances, which indicates their commute is multi-modal. This may be explained by the distance of their point of origin (home) from their workplace: higher income women tend to live farther from their workplaces (e.g., in suburbs, where real estate prices are lower). The use of multi-modal transportation necessarily implies walking short distances to access the next ride, although this element of commute is not captured in the data. The same pattern is observed when the surveyed population is disaggregated according to income.

The above findings indicate the possibility of differential impacts among various groups of the affected public regarding the provision of transport in an urban setting. This study investigated how particular segments of the commuting public, specifically low-income groups, and women, are affected by the arrangements that arise, either authorized or unauthorized, to meet their mobility and accessibility needs.

These differential impacts tend to vary the benefits of public policy and spending on transport on the different groups considered in this study, specifically across income groups and different genders. That is, while the overall level of public welfare may increase as a result of greater public spending in the public good of transport, the net welfare benefits may vary from one group to another and are not uniformly enjoyed. Such results do not conform to the precepts of a just and equal sharing of benefits by all. Planners and policy makers in transport should consider these points when designing transport interventions.

The study confirms the gender division of labor in households which influences the behavior of low-income female users, and their choices of means of paid services in public transport available to them. 'Paid services in Public transport' in the study makes clear the local meanings (rather than meaning subsidized transport), in that the term means 'paid services in transport on public roads,' which can either be authorized or non-authorized.

Across income groups, women spend more time in travel and have more trip legs. Low-income women spend more on transport than low-income men. Men have shorter travel times and have slightly less trip legs in their daily journeys than women yet spend relatively more of their income on travel than women do. Men tend to take more expensive modes of transport (such as taxis) to save on time but having to spend more for the privilege. Women, on the other hand, may be more conscious of the

money cost of transport. An observable gender difference is the propensity of women to combine a set of activities relating to their range of household tasks with the overall structure of their journey. Men of different income groups are more likely to take a single purpose unaccompanied trip. Likewise, more women of different income groups take a combination of different transport modes, including walking which is cheaper in terms of cost. Men of different income groups take modes of transport which get them more directly to their destination.

Examining the travel behavior of the different income groups does not add any new information. Findings confirm that commuters are mostly pedestrians and passengers rather than drivers of private vehicles. Both men and women are predominantly pedestrians and public transport passengers, with very few driving their own private vehicles. It used to be the case that drivers of motor vehicles were predominantly males, but this role is more and more becoming the domain of women as well, but it is difficult to say from the empirical data how significant this has become in Davao City.

In terms of mode of transport, it appears that women walk more than men. Also, more women than men tend to take authorized public transport. There are several factors for this: security, safety, comfort, and others, that tend to be important for women but not so much for men. This illustrates the importance of considering public space as gendered. Very few men or women take non-motorized transport for their daily commutes to work. There is little encouragement given to the walking mode and there is evidence that the road itself is the only usable path of people. The concerns of walking with motorized traffic is well noted, which takes us to the findings on security and safety.

### 6.1.2 Recognition: Identity and Social Relation

One distinct contribution of the integration of a gendered perspective in transport justice is its emphasis on the concept of personal security, alongside provision of transport facilities and services. A gendered perspective looks into the interaction of women within the public space, whether this interaction is between women and the modes of transport (e.g., motorized versus non-motorized, government regulated or not, private or public vehicles, walking), women and transport or mobility related infrastructure (e.g., roads, sidewalks, transport terminals, footbridges), or women and



other road users. Transport is intricately linked to mobility as well as factors affecting or may affect women's choices to engage or not public spaces for work, education, and other activities integral to developing one's capabilities and growth.

An insight of the study relates to the recognition of the combinations of identities of people in the city and treating these intersectionalities as important factors in designing and planning interventions. Once the differential implications on the diverse identities of people surface, a perspective on transport becomes more inclusive.

Four important findings about gender as an identity and social relations unfolded in the study.

- The current transport discourse in relation to user's needs, as evidenced by transport policy and monitoring, is limited to road safety, specifically traffic and vehicular crashes.
- There is no available gender-disaggregated data on traffic crashes with regard to victims and transport roles.
- More women than men feel vulnerable to personal attacks in public transport because of their gender, e.g., sexual harassment, and unlighted streets
- More men than women feel more stressed by factors which are not linked to gender in transport e.g., bad roads and reckless drivers.

The study showed in more detail the data on road deaths alongside the countries' income classification and number of registered vehicles in the context of Southeast Asia. On the trends in the international scene, high income countries (Singapore and Brunei Darussalam) have the lowest rate of road traffic deaths, while the highest are found in middle income countries, particularly in the upper middle-income countries. Regardless of the income classification of the country, majority of these deaths involved drivers or passengers of motorized 3 and 2-wheeled vehicles which are popular in the Southeast Asian region.

The WHO data is not disaggregated by gender, or other demographic information on the victims. Even available literature on smaller scale research samples only provides a glimpse on the gender dimension of the transport environment. During the conduct of the fieldwork highlighting the ethical dimension of discussions on road safety, most of this cutting-



edge work were still dealing with aggregate data sets. The gender, age and location factors of the preceding work has not been investigated as yet.

An analysis of research investments worldwide on the burden of disease for several conditions showed that road traffic injuries have been found to be severely underfunded for research investments compared with other health issues such as infectious diseases. The World Bank (2002:67) traces the policy neglect of transport to the lack of reliable evidence describing the dimensions and extent of transport safety. Available urban transport safety and security data, according to this report, is likely to be biased due to factors such as the reduced ability of low wage earners who are often women, to afford hospital treatment (ibid: 67). In LMICs, the current lack of management capacity for enforcing standards of road safety presents a difficult challenge. A clearly defined results focus is often absent, coordination arrangements are ineffective, supporting legislation is weak, funding is insufficient, promotional efforts are poorly targeted, mandates are ill-developed, and knowledge transfer is limited (Bliss & Breen, 2011).

The lack of data to assess the actual extent of the burden highlights that much remains to be done to investigate the potential solutions (Constant & Lagarde, 2010: 101). The absence of research on road crashes is important not only because it makes the issue invisible and minimizes how serious the problem is, but it hinders the search for and selection of appropriate remedies. (World Bank, 2002). There are few locality studies on VRUs, much less exploring the intersections of road safety and gender. The studies of Campbell et al (2004) and Rosen and Sander (2009) forwards that men, more than women, are likely to be victims of road fatalities as pedestrians, attributing this to their higher risk-taking behaviors, and exposure to vehicles with high impact speed. Elruet al (2008) found that men who are 60 years old and above are also more likely to be killed in road crashes than women of the same age group. A case study in Mexico also found that girls under 5 years old and women above 50 years old have a higher risk of dying in motor vehicle-pedestrian collisions. Overall, though, the mortality rates of males in vehicular crashes as pedestrians are much higher than females (10.6 per thousand for males, compared to 4.0 per thousand for females) (Hijaret al, 2001). The review of literature reveals mostly macro level analysis of longitudinal statistics, limited to a laborious collection of large amounts of quantitative, empirical data, and thereby contributing to lack of information of the unique context and conditions

existing in a specific place as well as the socio-demographic characteristics of those affected. In the Philippines, Verzosa and Miles (2016) noted that before 2008, age and sex-disaggregated data was not always available on road crash statistics from the Metro Manila Accident Reporting and Analysis System (MMARAS). Nevertheless, available data showed the following: fatalities are higher when it involves heavy and multiple motorized vehicles and elderly pedestrians (60 years old and above) as well as those occurring in the evening (7pm to midnight) and late at night (1am-5am), most of the fatal road crashes occur in high-speed, high-traffic volume and multi-lane roads. Generating and using these data, according to the researchers, would greatly enhance policy and planning on road safety, particularly for the vulnerable pedestrians.

There are also few accounts of a consideration of the reality of personal tragedy at the micro level, except for a few journalistic accounts used in road safety campaigns. Grimm and Trebich (2010:16) recommend more micro data covering information about road users risk attitude, risk knowledge and risk exposure to further enrich analysis. Related to this, it is important to note that it is not enough to take evidence at face value given that the bulk of current research has not gone beyond lengthy descriptions of situations. Often, this points to a lack of tools to guide readers in further analysis, or to the absence of a guiding theory for interpretation of causality.

Transport research is also limited at the national level. Available national literature related to transport safety and security in the Philippines (Viloria, 2000; Sigua, 2005; Lidasan, Espada, and de Leon, 2009) bring to light research frames<sup>48</sup> which focus on (1) aspects of motorization, and (2) private ownership's technical understanding of transport and urban planning with much emphasis on motorization. There is some confusion about "public transport" as transport afforded by the State with the principle of equity and "public transport" as licensed private transport for public use. Except for emphasis on the economic losses of accidents on the road and the use of some hospital data, available research is silent on the valuable social dimensions of transport safety and security.

Injuries from vehicular crashes, both fatal and non-fatal, is also the leading cause of injury by external causes in the country from 2013 to 2018 based on the last quarter data from the Online National Electronic Injury Surveillance System (ONEISS). An alarming note to the recent available

national data is that pedestrians are even listed high on the transport related injuries list by type of vehicle, next to that of motorcycles, confirming global data cited earlier on the situation of pedestrians in low and middle-income countries. The national report does not indicate the gender of pedestrians affected; thus, it is difficult to establish links between gender and road safety and security in the Philippines. It is possible, though, to draw on the findings of other studies on global and regional experience transport, although these are not conclusive. While some studies point to the higher vulnerability of male pedestrians compared to females (Durak, Fedakar, Tu'rkmen, Akgo'z, & Baduro'glu, 2008; Goren, Subasi, Gurkan, Tirasci, & Acar, 2005; Tom & Granie, 2011), which is attributed to the males' higher risk taking attitudes and likelihood to violate pedestrian rules, other studies found no correlation between gender and risk for transport-related injury (Dandona, Kumar, Ameer, Ahmed, & Dandona, 2008; Moe, 2008; Ibrahim, Day, Hirshon, & El-Seouhy, 2012). Stoker et al. (2015) observed that gender can influence pedestrian risk, particularly, the performance of gender roles in the public sphere. Drawing from their literature review, they pointed out that women as a group walk more than men in the 45 poorest countries in the world in relation to their housework or reproductive tasks (e.g., carrying water, buying food). The longer time spent by women on the road, often carrying heavy loads and often, also children, puts them at higher risk for road injuries. However, Stoker et al. also qualified that this needs to be explored further, and more research is needed on gender and transport in low-income countries.

The key points about Recognition in Transport justice are first, there is a relationship between income level and road traffic injuries which is revealed in data from cross-cultural studies across various countries which use level of national income as basis for comparison. Explicit ethical concerns on safe transport reflect that these have affected differences in the level of fatalities in the various countries with different level of incomes and different expression of ethics of their policies. It is safe to conclude that having resources is not a sufficient condition for transport security and safety. Explicit ethical considerations in national policy are a significant factor which influence people's safety and security in their transport environment.

Secondly, gender dimensions of transport environment are beginning to gain public attention all over the world. While the data is insufficient to draw general conclusions, there are already specific gender-features which

can be observed. These include mixed modality, i.e., walking and the use of public transport is found to be more common among women therefore assessing transport accidents cannot be restricted to the use of motorized vehicles alone. It is also crucial to look closely and carefully into the transport environment in which motorized vehicles are being handled as well as the individuals behind the wheels. This way, the ground is set for raising the validity of the “gender structure of the transport environment.”

The local level picture of the study in focusing on the realities of Davao City where primary data was gathered, offered new ideas on how transport planning based on a new understanding of social equity as equal distribution of a “safe space” for transport users in spatial planning may help advance the goal of transport justice. Findings from the random sample survey in Davao City show that, ironically, the majority of the respondents from both genders did not consider their travel to and from work as dangerous at all. In other words, unsafe transport standards seem to have been accepted as a way of life. Nevertheless, when asked about the actual safety-related conditions experienced by people in the three districts of the city, 86.8 per cent of all respondents considered sidewalks to be a very important means of avoiding traffic accidents.

Unlike the survey, the in-depth interviews of the subsample capture this invisible nuance related to security. The example of the daily experiences of Julienine, 24 years old, who spends an hour commuting using authorized public transport modes, such as the jeepney and the multicab, to reach her workplace which is Davao Doctor’s Hospital in District 1 located less than 10 kilometers away from her home in Nova Tierra, Lanang. Julienine shares her experiences as a public commuter on matters of security: “During one jeepney ride to work, another passenger pointed a gun at me and demanded for my cellphone. Nobody inside the jeepney dared to stop him because he had a gun.” After this experience, Julienne fears traveling at night. She also feels stressed about commuting with reckless drivers on the wheel, especially at night.

The survey results show that security and safety are the highest concern of both male and female respondents compared to values related to price, time use and comfort. Safety encompasses several specific elements which were indicated to be the most valued by both female and male respondents. Of all seven elements under the safety category, female respondents indicated highest rating of “Zebra crossings for pedestrians” and “Safe public transportation—brakes, lights and machine condition.” For male

respondents, “safe public transportation—brakes, lights and machine condition ranked the highest, followed closely by “Safe driving of public transport drivers”.

Security is the highest of all the transport concerns of almost all respondents, regardless of gender, compared to other transport related concerns of price, time use and comfort. Both genders also ranked price lower compared to safety and security. Comfort, compared to safety, ranked higher among males. The lowest ranked concern compared to safety and security – for both males and females – is time use. A study of seat choice, front or back, of solo taxi passengers found that a significantly greater number of men than women sat next to the driver in large urban areas, but that no sex difference in front-seat choice appeared in smaller communities. Very few women taxi drivers were observed. (Watson & Kearins, 1988) The data were interpreted in terms of sex differences in feelings of security, with solo women commuters feeling more vulnerable than men, particularly in large cities.

A relevant set of questions has emerged from the findings which scrutinize: who is harmed by traffic accidents or how are traffic accidents socially distributed; what are the main mechanisms and consequences from the perspective of transport justice? There is no official data in the transport policy documents of Davao City to ascertain facts about the type of people harmed by the record of traffic accidents. Police records of accidents were not woven in planning decisions of the short, medium and long-range transport documents studied. Nevertheless, information of this research culled from the medical records and emergency logbooks of one centrally located hospital may pressure more systematic research in the future to stress the urgent need of the importance of transport safety in the lives of people in the city.

As with the survey of their beliefs and values, the responses are the same: the experience of traffic, non-availability of public transport at certain hours and in certain areas, reckless and rude drivers and overcrowded public transport are experiences not unique to women or to men. However, a closer look at the responses also revealed that females, more than males, feel more vulnerable or threatened by acts of violence directed at their gender, that is, sexual harassment. Sexual harassment is disproportionately experienced by females than males. This refers mostly to physical (e.g., touching, being pinched in the buttocks) and verbal (e.g. catcalls) forms. A form of sexual harassment particular to females is being targeted

by flashers (men who show their genitals in public places and take pleasure in the shocked reactions of their audience) in public transport. One woman also narrated being mistaken by a foreigner as a prostitute woman. The woman was able to stop his harassment by brandishing a knife which she carries for protection (because she often leaves the house for work at dawn). Another woman also reported carrying a small knife wherever she goes because of a traumatic experience she had when she was only 10 years old and was almost raped by the driver of the jeepney she took to go home.

Sexual violence is an underlying fear when women report feeling uneasy traveling late in night, passing through areas deemed unsafe or notorious for violence (both when riding a public vehicle or walking), and non-lighted streets. The presence of neighborhood gangs in streets leading to their houses was also linked to sexual harassment. Apart from the concern of having their pockets or bags picked, women are also concerned about being sexually harassed when in overcrowded vehicles or jostling with other people to get a ride.

Focus on recognition as an element of transport justice has shown major progress in transport research globally and the importance of understanding “equity” in transport not just from the perspective of access, but also from the perspective of the social distribution of crashes among certain groups of vulnerable users as an indicator of bias in transport planning. Large studies on urban transport crashes (WHO, 2009; WHO, 2018) are useful in revealing that they do not happen only due to human behaviour, but are also related to spatial planning or lack thereof. Country-based studies reveal a clearer set of dynamics such as identifying the vulnerable locations, the types of accidents, types of persons involved as the basis for road safety designs.

Attention to the local politics of spatial planning, socially embedded in layers of local power relations, is needed to expose the mechanisms of framing “transport safety” as a condition, the inclusion and exclusion of aspects of “vulnerability” among users. Beyond the goal of reducing accidents and injuries, which incur economic and social costs to individuals and their families, standards of transport justice should be embedded in spatial planning at the community level. Beyond the notion of safety as a set of technical issues, there is a wide range of subjective meanings that are locally specific and may have further implications for movement in the



city as a key aspect in social participation. Hence, the public space is not only tangible but also intangible and both appear to be gendered.

What is surprising about the results of my study that while data gathering was done a decade ago, the situation has hardly changed in the meantime. There have been improvements in that the discourse on road safety is gaining momentum in the Philippines, as opposed to the transport sector where the discourse is still restricted to traffic issues. Gender perspectives are still absent. This context makes this study even more relevant as it comes at this junction.

### 6.1.3 Representation: Voice and Participation in formal spaces of decision-making

Two major findings of the research concerning imprints of the needs of people in the city on transport policy and plans are:

- Transport policies and planning is infrastructure- and vehicle-oriented (instead of user-oriented), and male-dominated.
- Gendered realities are not considered in transport planning.

The research presented original local knowledge and analyzed these along the lines of gender, pointing out how gendered knowledge on transport is critical in addressing access of women to transport. The research put much emphasis on how women are unable to participate in transport planning. The study gave voice and visibility to diverse experiences. Experiences can only be captured meaningfully with an openness for interdisciplinary approaches; thus, we talk about methodology—as contextualized. Counting people and taking all people into account. If not, we will be taking away the recognition and representation—components of transport justice. And we are not even talking about gender yet.

Representation as a concept captures the practice of people's participation, showing how the principles of democracy and the cultures of freedoms and rights work in the real world. Three Vs of voices, visibility and votes reflect how people are present in decision making. The research showed that expecting critical participation and consciousness on transport about gender has only begun. Evidence about difference and equality in the city planning processes is still thin. In the research, the gender factor in city planning has limited application beyond gender-disaggregation of demographic and socio-economic data, and traditional areas of concern such as health, crimes (e.g. violence against women), and family

welfare. In other fields than those traditionally associated with women's activities, such as health care and childcare, gender is clearly absent as a factor in planning. This is evidenced by the silence of the Comprehensive Development Plan (CDP) of Davao City on gender and gender equality goals in the light of transport planning, even as it forwards social equity as an overarching framework.

While transport is central to people's actual life circumstances, top-down decision making based on a 'generic' definition of 'transport', 'affordability' and 'safety' comes into conflict with daily life experiences of users. Transport policy and planning documents in Davao City have not utilized any data about people's experiences with the city's transport system, much less viewed these from gendered lenses.

The diverse situations of women are invisible and have not been brought to the negotiating table of making transport more equitable to various types of users. I found that women themselves feel excluded from the decision-making processes, but they do not assert their place in the table, so to speak. Could it be that they themselves lack or have limited grasp of the gendered dimensions of transportation and mobility in public spaces, thus could not articulate more solid arguments? Their articulations are mostly class based and related to access issues, but they tend not to be really gender-differentiated.

## 6.2 Theoretical Reflections and Contributions to the Literature

The Operational Dimension of transport includes (1) the relationship between technology and transport (2) the relationship between transport and society and (3) the socio-economic, cultural dimensions of accessibility, affordability and safety. Gender cuts through all three.

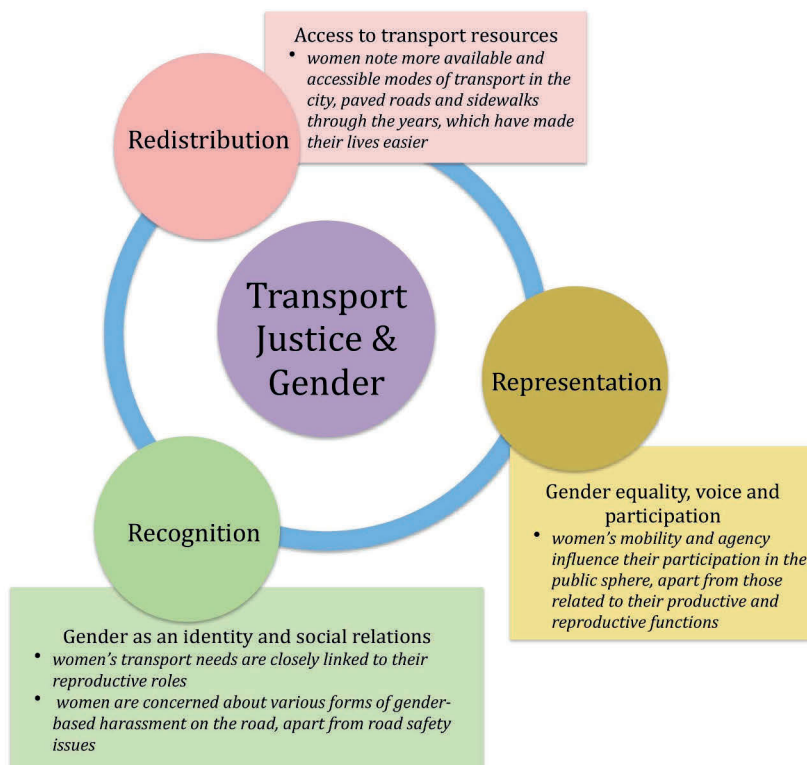
The preceding sections attempted to define the interconnection of transport technology, gender, class, society, and development. Technology as a concept is a relevant multiverse starting point for a theoretical reflection on transport. In the course of history, we are witnessing that technology is changing the world and people's lives dramatically. Unfortunately, these changes have not always brought positive changes, for women, the elderly and lower income groups. Technology, being value-laden, embodies the prevailing system of the society. This then reinforces and can even



exacerbate the oppression of women's experience. Despite the good intentions, if not critically planned and implemented, most technologies will not be able to deliver towards people's development. It will remain to be an instrument to impose further power to the already powerless (Stamp, 1989). This research clearly illustrates how technology is gendered: Women and the poor and elderly are consumers of technology instead of being active participants in designing and developing new systems of technology. As Wendy Faulkner mentioned, more women are in the receiving end of technology, instead of directly involved in creating it (Faulkner, 2001). Wajcman (2010) also noted of the shift of feminist analyses to examining the processes of development and utilization of technology from its earlier focus on women's access to technology. Faulkner (2001) suggested for women to organize as technology consumers as a tactic in pushing through reforms in various women's issues and concerns. This may also be true for the elderly, low-income groups, disabled persons, etc.

Our childhood education taught us that technology is an applied science. This is not a false statement. However, it does not give justice to the complexity of technology as a concept. Technology could be something we can touch, an artifact; a process and a system in itself; or a complex socio-technical system. Whichever form it takes, what is evident is that there is the dialectical nature of technology, which should take center stage to initiate deeper inquiry. Our appreciation in this research is that transport technology is taking a part in shaping society and at the same time it also being shaped by the society. Technology does not exist in a vacuum and that society and the existing relations in a society are crucial when we talk about technology. It is for this reason that gender blindness of transport systems and planning need to be reconsidered from a socially inclusive as well as gender perspective, and most importantly, their intersections. This study has provided conceptual tools and has urged to fill data gaps, which may be useful for the transformation of urban transport in low- and medium-income countries that serves society in a more just manner. It is for this reason that gender blindness of transport systems and planning need to be reconsidered from a socially inclusive as well as gender perspective. My study has provided the conceptual tools and has urged to fill data gaps, which may be useful for the transformation of urban transport in low- and medium-income countries that serves society in a more just manner.

**Figure 35**  
Key Empirical Insights



### 6.3 Future Research

The study is a foray into an area of gender studies and transport studies yet to be fully explored, proof that there is wide arena to design studies, to look into other research questions, and guidelines and indicators so as to enhance existing indicators and tools as it is best to have mechanisms in place to be measurable in real life. This leads to initiatives to deepen research questions.

The limitations of the study of covering women versus men and the intersections of gender with class/income could be expanded in the future. As only Davao City is covered, the methodology used has potential for replication in similar cities and regions, as well as to inform studies in rural areas. The methodology of the study and its feminist orientation can

also inform studies from the standpoint of other vulnerable groups such as persons with disabilities and the elderly. Although the data is collected from only one city, Davao City is the largest in the country, lessons may be learned from other cities as well.

The findings of my study confirm available material in a recent volume of work which emphasizes the need to make the invisible social issues more visible in transport planning (Pereira, forthcoming 2021)<sup>49</sup>. The authors recognize that social issues are not new. Equity (Pereira et al, 2017 in Pereira, 2021:1), democracy (Enright 2019 in Pereira, 2021:3) and diversity, (Bullard 2004; Sanchez et al 2007; Rothstein 2017 in Pereira, 2021:3) has been raised as far back as six decades ago. My study is a contribution along this direction, with fresh empirical data on this invisible theme of equity, democracy, and diversity I have been able to trailblaze research with a more focused gender lens, using mixed methods which is thin in transport planning research. Moreover, my research in only one country signals that it is time for local governments, academic institutions and governance bodies in the Global South to embark on serious research on Transport Justice and Gender to guide the direction of their planning decisions.

What are my new insights? What should be part of future research? Future research on gender and transport should address questions like: How can transport planning address different needs of diverse women? How can we design inclusive transport which would consider sustainable and fair subsidies for low-income transport users? How can we attain transport justice through intersectionality of transport users: through the incorporation of the needs of different income groups of men and women.



# Appendices

## Appendix 1 Random Sample Survey Instrument

**GENDER AND TRANSPORT  
THROUGH THE CAPABILITIES APPROACH:  
UNDERSTANDING THE CASE OF DAVAO CITY, PHILIPPINES  
2008 RANDOM SAMPLE QUESTIONNAIRE**

Questionnaire Final ID # \_\_\_\_\_ : \_\_\_\_\_ : \_\_\_\_\_

Questionnaire rejected? Why? \_\_\_\_\_

Selected for Sub-sample? If so, code S \_\_\_\_\_

Location                      Davao City      District \_\_\_\_\_

Name of Workplace \_\_\_\_\_

Interview Date & time                      \_\_\_\_/\_\_\_\_/\_\_\_\_ : \_\_\_\_:\_\_\_\_

Interviewer \_\_\_\_\_

Language used by respondent \_\_\_\_\_

Call-back time required on question #s: \_\_\_\_\_

Call-back date & time                      \_\_\_\_/\_\_\_\_/\_\_\_\_ : \_\_\_\_:\_\_\_\_

Interview completed? \_\_\_\_\_

Respondent's Name: \_\_\_\_\_

Respondent's ID # (HH roster) \_\_\_\_\_

Interview checked by, date                      \_\_\_\_\_ \_\_\_\_/\_\_\_\_/\_\_\_\_

Coded by, date                      \_\_\_\_\_ \_\_\_\_/\_\_\_\_/\_\_\_\_

Coding checked by, date                      \_\_\_\_\_ \_\_\_\_/\_\_\_\_/\_\_\_\_

Data-entry by, date                      \_\_\_\_\_ \_\_\_\_/\_\_\_\_/\_\_\_\_

Data-entry checked, date                      \_\_\_\_\_ \_\_\_\_/\_\_\_\_/\_\_\_\_

**Section 2 MOBILITY** FILL IN FOR ALL TRIPS made the day before ( except Mon and Fri).

**DRAW THE TRAVEL DIARY**

Trip Number	1	2	3	4	5	6	7	8	9
2.1 Trip purpose									
2.2 Origin									
2.3 Destination									
2.4 Distance in Km									
2.5 Time started									
2.6 Time Ended									
2.7 Mode									
2.8 Transport Role									
2.9 Load Carried									
2.10 Weight in kg									
2.11 Frequency									
2.12 Cost									

2.1 PURPOSE	2.2/2.3 ORIG&DES	2.7 MODE	2.8 ROLE	2.9 LOAD	2.11 FREQUENCY	CODES FOR ALL
1 home 2 work 3 market 4 school 5 eat meal 6 collect water 7 collect firewood 8 health related 9 recreation/visit 10 pick up/drop off family member	1 home 2 workplace 3 marketplace 4 school 5 san2 store 6 city proper 7 transport stop 8 transport terminal 9 health unit 10 hospital 11 community center 12 religious facility 13 recreation 14 relative/friend's house	1 walking 2 bicycle 3 pedicab 4 rickshaw 5 tricycle 6 habul/skylab 7 motorcycle 8 multicrob 9 jeepney 10 van 11 jeep 12 truck 13 taxi 14 private car 99 others, specify	1 pedestrian 2 passenger 3 driver	1 children 2 water 3 food 4 books 5 merchandise 6 agricultural product 0 none	1 2x/day 2 daily 3 weekly 4 2-3x/week 5 4-5x/week 6 monthly 0 none	99 others, pls specify 98 don't know 8 don't know FU: follow up blank: not applicable

<p><b>Section 1 WORK</b></p> <p><b>1.1 Nature of Work</b></p> <p>1.11 What is your main work or job at present? / / / /</p> <p>1.12 What other work do you do at present that brings in money? / / / /</p> <p><b>1.2 Work Period</b></p> <p>1.21 How many hours per day do you work in this workplace, on average? / / / /</p> <p>1.22 Which of the following best describes your work hours? / / / /</p> <p>1.23 What other main work or jobs have you done in the past 12 months? / / / /</p> <p>1.24 How long have you been in this workplace (in months)? / / / /</p> <p><b>1.3 Work Status</b></p> <p>1.31 Is this work permanent, temporary or casual? / / / /</p> <p><b>1.4 Pay</b></p> <p>1.41 Are you paid a wage? / / / / Yes / / / / No</p> <p>1.42 Every how often? / / / /</p> <p>1.43 How much do you take home in pay? / / / / / / / / / / / /</p>					
<b>1.5 EMPLOYER TYPE</b>	<b>1.42 PAY SKED</b>	<b>1.3 STATUS</b>	<b>1.22 WORK HRS</b>	<b>1.21 PERIOD</b>	<b>1.1 / 1.23 NATURE</b>
1 National government 2 Semi-autonomous public institution 3 Local govt 4 Private enterprise 5 Private individual 6 Cooperative 7 Self-employed 99 Others, pls. specify	1 Daily 2 Weekly 3 Bi-monthly/over 15 days 4 Monthly 99 Others, pls specify	1 Permanent 2 Temporary 3 Casual/Daily 99 Others, pls. specify	1 I work a shift with a fixed start time 2 I have some flexibility, but have to be at work at a certain time 3 I can plan my own work hours 99 Others, pls specify	1 Less than 8 hours 2 8 hours 3 more than 8 hours	1 market vendor 2 gov't employee 3 hired labor 4 factory worker 5 professional (doctor, engineer etc) 6 farmer 7 fisherfolk 8 agricultural worker 9 none 99 others, pls specify

## Section 3 Values on Transport

*On a scale of 1 to 5 where 1 means not at all important and 5 means very important, how important are each of the following items to you in your travel to work? 99 DK*

3.1 Price	NOT AT ALL IMPT	VERY IMPT
1 Cost of Fare	1	2 3 4 5
2 Discounted Fares for commuters	1	2 3 4 5
<b>3.2 Time Use</b>		
1 Provide transport services that pass where I live	1	2 3 4 5
2 Improvement of access to bicycle, and other non motorized transport	1	2 3 4 5
3 Improvement of existing footpaths	1	2 3 4 5
4 Proximity of transport stops	1	2 3 4 5
<b>3.3 Safety and Security</b>		
1 Safe Driving by Public Transport Drivers	1	2 3 4 5
2 Safe Public Transport –brakes, lights, machine condition, etc	1	2 3 4 5
3 Sober drivers----no alcohol nor drugs	1	2 3 4 5
4 Separate lanes for bicycles and other non motorized transport	1	2 3 4 5
5 Sidewalks to be able to walk safely	1	2 3 4 5
6 Pedestrian lanes/Zebra crossings to cross the road safely	1	2 3 4 5
7 Pedestrian overpass in highways to cross safely	1	2 3 4 5
8 Street lighting at night	1	2 3 4 5
<b>4.4 Comfort</b>		
1 Public Transport is not overcrowded, too packed with people and load	1	2 3 4 5
2 Improvement of existing roads, footpaths, etc	1	2 3 4 5
3 Protection from rain and weather conditions at transport stops	1	2 3 4 5
4 Ban blaring music/noise on public transport	1	2 3 4 5





*Appendix 2*  
*Subsample Instrument*

**GENDER AND TRANSPORT IN DAVAO CITY  
2008 SUBSAMPLE INTERVIEW GUIDE**

RSS Final ID #: \_\_\_\_\_

Respondent's Name: \_\_\_\_\_

Location: Davao City District ( ) 1 ( ) 2 ( ) 3

Workplace of Respondent: \_\_\_\_\_

Complete Home Address: \_\_\_\_\_

Telephone number: \_\_\_\_\_

Email address (if any): \_\_\_\_\_

Date of Interview: 2008 / \_\_ / \_\_ Day of Interview: \_\_\_\_\_

Start Time of Interview: \_\_ : \_\_

End Time of Interview: \_\_ : \_\_

Interviewer: \_\_\_\_\_

Comments:

**Section 1: OPPORTUNITIES****1. 1 MOBILITY AND ACCESSIBILITY****1. TRAVEL DIARIES****GAWAIN PAG WEEKEND:**

Sa unang interview namin sa inyo, tinanong namin yung pagbyahe po ninyo papunta at galing sa lugar ng trabaho niyo pag Lunes hanggang Biyernes . ....Kung sa Sabado at Linggo po naman, ano po ang mga pangkaraniwang gawain ninyo? ( NOTE: ILISTA yung mga "typical" na gawain na babangitin niya)

Halimbawa, itong nakaraang Sabado at Linggo,anu ano yung mga gawain ninyo sa mga araw na yun. ).....

(NOTE: Ggumawa ulit ng travel diary kagaya sa RSS. Bigyan ng pansin ang pagbisita sa mga kaibigan/pamilya, pamamasyal, pagpunta sa doctor, sa clinic o sa health center, pagpunta s miting sa hall, pag follow up ng mga papeles kung kalilangan, pagbisita sa maysakit, pagpunta sa simbahan, atbp)

SABADO

TRIP NUMBER	1	2	3	4	5	6	7	8
TRIP PURPOSE								
ORIGIN								
DESTINATION								
DISTANCE IN KM								
TIME STARTED								
TIME ENDED								
MODE								
TRANSPORT ROLE								
LOAD CARRIED								
WEIGHT IN KG								
FREQUENCY								

LINGGO

TRIP NUMBER	1	2	3	4	5	6	7	8
TRIP PURPOSE								
ORIGIN								
DESTINATION								
DISTANCE IN KM								
TIME STARTED								
TIME ENDED								
MODE								
TRANSPORT ROLE								
LOAD CARRIED								
WEIGHT IN KG								
FREQUENCY								

Are there sidewalks when you travel ? (during your weekend travel)

---

---

Have you experienced physical attack ? (during your weekend travel)

---

---

Have you experienced embarrassment ? ? (during your weekend travel)

---

---

---

Have you experienced sexual harassment on your trips related to your reproductive work?

---

---

Do you consider your travel dangerous?

---

---

Do you experience stresses related to your use of transport services/ travel on your weekend trips?

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1. **CHANGES / MGA PAGBABAGO:**

Sa \_\_\_\_ taon ninyo sa Davao ( tignan sa RSS ng respondent kung ilan tao na sya sa Davao City), anu-ano ang mga napansin ninyong pagbabago sa sistema ng transportasyon?

**Pagbabago sa Transport Infrastructure:** kalye, daanan, footpaths, tulay, sidewalks, mga terminal ng sasakyan, waiting sheds, pedestrian lanes

**Pagbabago sa Transport services:** mga sasakyan, jeep, tricycle, etc., mga driver, mga commuters, atbp

**Mga pananaw sa mga pagbabago na ito:** tungkol sa costs, comfort, safety, security, convenience, atbp

1. Anu-ano yung mga napansin/naalala ninyo sa sistema ng transportasyon sa lunsod ng Dabaw noon panahon na bata kayo at nag aaral sa elementarya, nung nasa high school kayo, sa kolehiyo/ nag aaral kayo, nung nag asawa na kayo or nagkaroon na kayo ng anak, etc.....

Mga napansin sa panahon na ito, mga Pagbabago atbp	Palagay ninyo sa pagbabago: positibo o Negatibo? Iba pang masasabi
2000s-----	
1990s-----	
1980s	
1970s	
1960s	

**1.1.3 CONSTRAINTS TO MOBILITY**

Merong ba po kayong karanasan (puwede sa nakaraan or sa kasalukuyan) ....gaya ng lugar na kailangan ninyong puntahan o mahalagang puntahan o gusto ninyo puntahan na lugar..... ngunit di kayo nakakapunta sa lugar na ito? Kaugnay ng transportasyon .....Ano ang mga pangyayaring ito? Bakit hindi kayo nakapunta o nakakarating sa dapat ninyong puntahan? (Pakuwento mo sa respondent ang insidenteng o mga pangyayaring ito)

Merong po ba kayong maibabahagi bae sa iyong karanasan, tungkol sa situwasyon o mga problema sa sistema/infrastructure/services ng transportasyon sa lugar ninyo . (Sa district niya. Sa pagpunta sa mga kelangan niyang puntahan, atbp.)



**Section 2: CAPABILITIES****2.1.1 MGA GAWAIN SA BAHAY:**

Household Size\_\_\_\_\_ (get from RSS)

Sa ordinaryong araw, sino ang gumagawa ng trabaho sa bahay? (take note of the names on the list in the RSS of the SS respondent) Sa mga trabaho sa bahay , ilan oras at sino ang gumagawa?

**2.1.2 ACCESS AND CONTROL**

Anu-ano ang mga sasakyan ng pamilya/HH ninyo? (see RSS to review)

Sino ang may ari nito? Sino ang gumastos para sa mga sasakyan na ito?

Sino ang gumagamit nito?

SASAKYAN	SINO ANG GUMASTOS	SINO ANG MAY-ARI	SINO ANG MADALAS GUMAGAMIT

Sa loob ng inyong pamilya/HH, ano ang proseso ng pagdedesisyon na may kinalaman sa transportasyon ? (halimbawa, gastos, paggamit ng sasakyan, atbp)

Ito ba ay pinaguusapan? Sino ang gumawa ng desisyon tungkol sa mga bagay na may kinalaman sa transportasyon, gaya ng gastos, atbp?  
Halimbawa, kung may sasakyan ang pamilya/HH...yung paggamit ng sasakyan, sino ay gumagamit nito?

Pagdating sa mga desisyon ukol sa pagbyahe or transportasyon sa loob ng inyong HH/pamilya, sino ang may pangunahing desisyon? Sino yung nasusunod kung may pagkakaiba ng pangangailangan? (conflict—who is given priority). Halimbawa, tungkol sa gastos na may kaugnayan sa transportasyon.

Merong po ba kayong karanasan maging kasama sa isang proceso/ sa meeting/ ng pagkokonsulta or pag-uusap sa pagdesisyon tungkol sa transportasyon sa lugar ninyo.

Halimbawa: yung pagdesisyon sa kung saan itatayo ang isang building gaya ng health center. O ang barangay hall. O yung simbahan. O yung building sa serbisyo para sa mga tao sa barangay.

Kung oo, pwede po ba ninyo ikuwento ang karanasan ninyo sa ganitong proceso.

**1. DIMENSIONS OF VALUE**

*(note: medyo sensitive/ seriosong tanong ito kaya kelangan umabot ka sa isang malalim na paguusap ng iyong respondent dito)*

Anu-ano ang inyong mga mithiin? Para sa inyo, ano ba ang ibig sabihin ng “maaliwalas o magandang buhay/ good life.” Ano po ang minimithi ninyo sa buhay?

(puwede ito pangyayari, bagay, gamit, atbp. Ilista ang mga sa tingin ng respondent ay mahalaga para sa kanya)

Nakakatulong ba o nakakasagabal ba ang sistema ng transportasyon sa pag-abot ninyo ng iyong mga mithiin?

Ano ang pinakamaayos/magandang paraan upang masali sa proseso pagdedesiyon tungkol sa transportasyon sa lunsod ng Dabaw ang pangkaraniwang tao?



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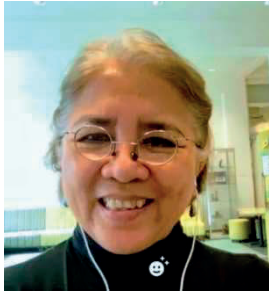
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