A thesis submitted to the Department of Environmental Sciences and Policy of Central European University in part fulfillment of the Degree of Master of Science

Is the Public Utility Vehicle Modernization Program (PUVMP) the solution to the transportation crisis in Metro Manila, Philippines?

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July 2021

Vienna

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ABSTRACT OF THESIS submitted by:
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for the degree of Master of Science and entitled: Is the Public Utility Vehicle Modernization Program (PUVMP) the solution to the transportation crisis in Metro Manila, Philippines?

Month and Year of submission: July 2021.

Transportation congestion has been the problem of urbanized areas around the world. Metro Manila has been called the "most congested city" in developing Asia. With a population of over 12 million people and the public transportation capacity can only accommodate around 3 million people as well as the urban road transportation is dominated by old, run-down buses and jeepneys, it is no wonder that for those who can – would opt for private car use. To address this problem, the national government launched its Public Utility Vehicle Modernization Program (PUVMP). The program seeks to overhaul the current transportation system through its ten (10) components: regulatory reform, local public transport route planning, route rationalization, fleet modernization, industry consolidation, financing Public Utility Vehicle modernization, pilot implementation, stakeholder support mechanism and communication. The implementation of the program is faced with several challenges: high resistance from the transport workers, institutional constraints, program financing, and a pandemic happened in the middle of its transition. The challenges should be addressed through necessary augmentations and a paradigm shift to truly encapsulate sustainable mobility and just transition in the transport sector.

Keywords: sustainable mobility, urban mobility, urban road transportation, just transition, Metro Manila

Acknowledgements

Going into graduate school in the middle of pandemic was challenging but I am still grateful for – most especially to be able to travel and still be able to meet new people.

I would like to thank CEU and the Department of Environmental Science and Philosophy's faculty, staff, and colleagues. I would like to give special mention to Prof. Zoltan, my thesis supervisor, who had been patient with my ideas and draft and always generous with this time and wisdom.

My family and friends, friends who have become family, and Carlo, all of whom have supported me in the decision to move halfway across the world when countries have been closing its borders. It is a quite remarkable that I have written about movement and mobility study at a time when I also do not know if I will be able to move back to my country as transportation access and issues is at its worst in recent years. It is a lifelong learning that will definitely go beyond the Zoom and break-out room discussions.

Table of Contents

List of Figures

List of Tables

List of acronyms

DENR	Department of Environmental and Natural Resources
DILG	Department of Interior and Local Government
DO	Department Order
DOTr	Department of Transportation
GoP	Government of the Philippines
Greater Capital Region	Metro Manila plus neighboring regions (III-Central Luzon and IV-A CALABARZON)
LBP	Land Bank of the Philippines
LGU	Local government unit
LPTRP	Local Public Transport Route Plan
LTFRB	Local Transportation Franchising and Regulatory Board
MC	Memorandum Circular
Metro Manila	also known as the National Capital Region (NCR); composed of 17 LGUs (16 cities and 1 municipality)
Mega Manila	Metro Manila plus neighboring provinces
MM	Metro Manila
OFG	Omnibus Franchising Guidelines
	"Omnibus Guidelines on the Planning and Identification od Public Road Transportation Services and Franchise Issuance"
OTC	Office of Transportation Cooperative
PUVMP	Public Utility Vehicle Modernization Program

1 Introduction

1.1 Background of the study

Transportation crisis worsens worldwide (Pojani et al. 2017). Trends show that the cities are becoming increasingly motorized and less sustainable(Pojani et al. 2018). Urban transport problems include air pollution, congestion, accidents, noise, climate change, energy depletion, visual intrusion, and lack of accessibility for the poor (Pojani and Stead 2018). These problems impose tremendous human and economic costs on the society (Jorgensen et al. 2019). With these modern problems, it is imperative for nations "to promote integrated an integrated approach in policymaking at the national, regional and local levels for transport services and systems to promote sustainable development, including policies and planning for land use, infrastructure, public transport systems and goods delivery networks, with a view to providing safe, affordable and efficient transportation, increasing energy efficiency, reducing pollution, congestion and adverse health effects and limiting urban sprawl, taking into account national priorities and circumstances(UN 2002)." However, urban transportation problem is perverse (Pojani et al. 2017). While some sector improves as societies becomes wealthier, transport problem worsens (Pojani et al. 2017). It is one of the most pressing problems that beset emerging and developing economies as they experience rapid growth.

Such is the problem of Metro Manila, a megacity that has been called the "most congested city" in developing Asia. The capital region is touted as one of the most notorious megacities in terms of lack of urban mobility and inefficient public transport systems (Mijares et al. 2014). According to a study by the Boston Consulting Group, an average commuter is stuck in traffic

for an average of 66 minutes per day (Chin et al. 2017). It is estimated that the local economy is losing around USD 72.17 million per day due to lost opportunities (JICA 2018).

Majority of the commuting public relies on road-based public transportation. However, only 21.6 %of the registered 3.1 million registered motor vehicles gives service to the commuting public (JICA 2014b). Aside from this, road-based transportation are composed of old vehicles, most of them 10 years old or above (Sunio et al. 2019). In 2017, the national government implemented the Public Utility Vehicle Modernization Program (PUVMP)which aims to improve the public transportation system in the country and lessen the air pollution brought by dilapidated units (San Juan 2020). Its implementation aims to shift the public transportation to safer, more efficient, convenient, climate friendly and environmentally sustainable technologies (R. Siy 2021). Some experts have lauded the shift to low carbon technologies by becoming more attractive and user-friendly. One of the objectives of the program is the environmental aspect which is to "have an urban transport system which reduces its negative impacts on the environment and public health, towards healthy cities" is in the realm of sustainable transportation. The program aims to introduce road-based modern vehicles as well as revamp practices, policies, and business models. The program also aims to address 'just transition' in the transportation sector as it aims to employ PUV drivers on fixed salary and benefits with no compensation linked to ridership.

This development in the transportation sector it is of interest because of its potential to solve the traffic problems in the capital region. At the same time, it is of global importance because of its potential to contribute to the emissions reductions. The Philippines' pledge to the Paris Agreement is one of the most ambitious in the world with the 75% reduction in greenhouse gas (GHG) emissions in the agriculture, wastes, industry, transport, and energy (National

Economic and Development Authority 2021). The commitment is equivalent to a projected business-as-usual emission of 3,340.3 $MTCO_2e$ from 2020 and peaking in 2030 (National Economic and Development Authority 2021). According to the Climate Change Commission (CCC), the unconditional 2.71% commitment will largely come from the energy efficiency and public transport modernization programs (Ranada 2021). It would be interesting to investigate the implementation of this program. This study hopes to reveal the strengths and weakness of the program and seeks to contribute to the improvement of the program. The result hopes to provide lessons for the metro wide and in extension, the nationwide implementation of the modernization plan.

1.2 Research aims and objectives

This study examined the design and process implementation of the PUMVP. The examination of the program focused on its design and process. The focus is the three (3) year transition period towards modernization. The program's gradual implementation covered the period of June 2017 to December 2020. This study examined the implementation of the program and investigated issues pertaining to governance. Central question to this study is how the PUVMP is being implemented to solve the transportation crisis in Metro Manila? Specifically, this study aims the following:

1. Evaluation of the national and local policies that shaped the PUVMP
2. Examination of the state of transport planning and governance concerns on the implementation of PUVMP in Metro Manila cities and municipality

This is a case study on the implementation of the PUVMP in Metro Manila which focus on the policies and policy actors involved in its implementation. It made use of key informant interviews, policy review, and archival research. These enabled the identification of the process involved in the program, as well as dig deep into the design phase of the program. The study hoped to contribute to the study of sustainable mobility and just transition with focus on the environment of an emerging and developing country. Data were obtained based on the following questions:

1. Who are the target beneficiaries?
2. How did the implementing agency capacitate those affected by the policies?

   What are the measures taken to address resources and capability of LGUs in integrating the local network with the national road networks?
3. What are the impacts or effects of the program to its target beneficiaries?
4. What are the challenges encountered in the implementation of the PUVMP?

   What were the roadblocks encountered during its transition period?

   How receptive are the LGUs in taking the lead solving the transportation requirements in their respective city?

   How receptive are the operators in the implementation of the program?

1.3 Outline of thesis structure

This study is divided into 5 chapters: (1) introduction which forms the basis of this research, and its aims and objectives: (2) review of related literature surveys scholarly articles, policy documents, and other sources relevant to this study; (3) methodology which contains the tolls

and process for data collection and analysis; (4) discusses the results and discussions of the study; and (5) conclusions and recommendations of the thesis.

2 Related Literature

The following section contains the discussion of sustainable mobility within the context of sustainable transportation and just transition. It will explore of the complexity of the transportation problem in the capital region followed by some of the interventions undertaken that tried to solve the problem. The chapter ends with the discussion on the details and characteristic of the PUVMP.

2.1 Sustainable urban mobility and the 'Just Transition'

To build the theoretical framework, we draw insights from the concepts of sustainable mobility, urban mobility, and just transition. Sustainable mobility aims "to ensure that our transport systems meet society's economic, social and environmental needs whilst minimizing their undesirable impacts on its economy, society and the environment." According to ADB, the path to low-carbon sustainable transport in developing countries wherein the transport infrastructure is still developing is through "Avoid-Shift-Improve." This approach involves the combination of policies and measures that avoid car-centric approaches that produces a lot of emissions, shift to less-carbon intensive transport moves, and improve the fuel efficiency of vehicles (Leather et al. 2009).

The focus of sustainable transport is to move people efficiently rather than cars (Mead 2021). It includes transportation options such as electric buses, trains, BRT systems, cycling, and walking.

The transportation sector relates to the energy sector as it runs from the seemingly limitless extraction and concentrated growth of fossil fuel (CEED 2019). The concept of just transition is related to our consumption of goods and services. Its prominence was brought about the traction its getting from the government and non-governmental organizations. Through the years, conversations on the linkage of labor to just transition, and climate change have been brought to the world stage especially with the 2015 Paris Agreement (UNFCCC 2015). Behind these goods and services are the workers that produces the things we desire and need. Just transition was first introduced after World II wherein the need to support the displaced atomic workers have created the clamor to "provide financial support and opportunity for higher education for displaced workers, who are transitioning together with the economy.(CEED 2019)". The concept was taken up by the environment movement due to need to "transition to a cleaner way of manufacturing" (Labor Network for Sustainability n.d.). In essence, just transition pertains to the principle of equity (Labor Network for Sustainability n.d.).

The concept gained traction in 1990s when the 'Just Transition' was proposed to assist the fossil fuel workers displaced by environmental protection policies (CEED 2019). The International Trade Union Confederation (formerly International Confederation of Free Trade Unions) iterated that a just transition can achieved:

> "Through socially responsible and green investment, low-carbon development strategies, and by providing decent work and social protection for those whose livelihoods, incomes and employment are affected by the need to adapt to climate change and by the need to reduce emissions to levels that avert dangerous climate change."

This quotation has been adopted into the 2015 Paris Agreement:

> "Taking into account the imperatives of a just transition of the workforce and the creation of decent work and quality of jobs in accordance with nationally defined development priorities."

According to a report made by the Center for Energy, Ecology, and Development, the Philippines can adopt these two themes in order to have Just Transition: 1) address issues of mass unemployment, displacement, and economic dislocation; and 2) systemic framework for the shift towards a low-carbon society (CEED 2019). This is a good starting point on how we can proceed with just transition since there has no binding international set of standards has been really adopted yet. According to CEED (2019), just transition in the Philippines recognizes the gravity of the issues that connects climate change and human rights in the Philippines. Mine workers (coal, gold, nickel) and mine-affected communities often overlook environmental concerns because of the promised livelihood of these projects.

2.2 Transportation in the Philippines

The Philippines, just like any emerging economies in the world, is a country with large populations that is undergoing major change in urban structure, motorization, and all the associated social, economic, and environmental impacts in positive and negative senses (Pojani et al. 2017). With a population of more than 107 million people, it is one of the most densely populated countries in the Asia-Pacific region(Statista 2019). The concentration of the population is in large cities mainly in Metro Manila, the national capital region. According to the Country Program Evaluation (CPE) of the World Bank, the current state of transportation infrastructure in the country is inadequate to meet the demands of the rapidly growing and urbanizing population (World Bank 2019).

Motorized nation

A JICA study in 2014 estimated that 72% of the road traffic is generated by private cars yet its travel demand is only at 30% (JICA 2014a). With the focus to move cars, rather than people, transportation projects focus more on building roads. This response in the urban transportation problem addresses symptoms rather than cure (Pirie 2011).

Table 1. Vehicle growth rate in the Philippines from 1980 to 2010.
Source (Gota 2014).

	Motorcycles and tricycles	Cars + SUV's	Utility Vehicles	Bus	Total
1980-1990	8.12	3.41	5.08	-0.46	4.68
1990-2000	12.51	5.47	8.65	6.62	9.1
2000-2010	10.98	3.42	2.10	0.61	6.00

Table 1 shows the vehicle growth in the country for the past 40 years. The trend shows that popularity of private-owned vehicles compared to those of public transport. The rate of growth rate for motorcycles and cars has consistent in the past years.

Table 2. Number of Motor Vehciles in Mega Manila, 2011
Source: (JICA 2014)

Area		Cars / SUV	Utility Vehicle	Buses	Trucks	MC / TC	Total
Mega Manila	Metro Manila	602,294	575,614	13,345	89,032	734,465	2,014,750
	Region 3[1]	114,819	239,239	4,949	52,450	556,228	967,685
	Region 4[2]	129,688	248,603	5,036	29,103	585,793	998,223
	Total	846,801	1,063,456	23,330	170,585	1,876,486	3,980,658
Philippine		1,112,686	1,748,402	34,478	361,916	3,881,460	7,138,942
Mega Manila % (to PH)		76%	61%	68%	47%	48%	56%

[1] Region 3 lies to the North of Metro Manila. It is composed of the provinces of Aurora, Bataan Bulacan, Pampanga, Nueva Ecija, Tarlac, and Zambales.
[2] Region 4 borders Metro Manila to the South and is composed of Batangas, Laguna, Cavite, Laguna, Quezon, and Rizal.

Lack of quality urban transport system

Urban road transport system heavily relies on the private sector. This leads to the irrational network of PUVs and overlapping pf routes. Routes of PUVs are reactive to the seemingly high demand of passengers in route. This phenomena leads to sometimes oversupply of public transport in some route while lack of travel supply in other routes.

Poor quality of road network

Trade relies on the ability of the system to transport goods and services from its producers to consumers. A poor-quality road network hinders growth and development. Many of the road networks in the country are inadequate and poorly maintained due to huge funding gap for road maintenance and continuing capital on the road system (ADB 2012).

Lack of intermodal integration

Another distinct characteristic of the urban transportation in the capital is the existence of bus terminals along one of the busiest highways in the country. Provincial buses maneuver along EDSA to get in and out of their terminals (De Leon n.d.). The inadequate and poorly designed bus terminals contribute to the heavy flow of the traffic in the metro most especially during rush hours. Many of these bus terminals do not provide proper waiting areas to its passengers which results to some of the passengers loitering the sidewalks. These scenarios are unsafe for both the passengers as well as the motorists.

Figure 1.Inadequate and poorly designed bus terminals along EDSA.
Source (De Leon n.d.)

2.3 Transportation crisis in Metro Manila

The transportation situation in Metro Manila is said to be a result of decades long dynamics of political, economic, and cultural forces (Romero et al. 2014). In a study conducted by JICA in 1999, it described Metro Manila with congested roads, commuting time and distance lengthened, in-vehicle congestion and comfort level of public transport decreased, worsened air pollution, and increased rates of accidents (JICA 1999). To understand the situation, we take look first at the spatial and growth trend in the capital.

Table 3. Population Growth from 1980 to 2019 in Mega Manila.
Source (JICA 2014)

Province/City/ Municipality		Area	Population				Actual Population Growth Rate (%)		Population Density	
			Actual			Estimated				
			1990	2000	2010	2030	'90-'00	'00-'10	2010	2030
Metro Manila		620	7,929	9,933	11,858	13,904	2.3	1.8	191	224
Mega Manila	Bulacan	2,796	1,505	2,234	2,924	3,958	4.0	2.7	11.3	14.2
	Rizal	1,192	977	1,707	2,485	3,474	5.7	3.8	20.8	29.1
	Laguna	1,918	1,370	1,966	2,670	3,733	3.7	3.1	13.9	19.5
	Cavite	1,574	1,153	2,063	3,091	4,321	6.0	4.1	19.6	27.5
	Sub-total	7,479	5,005	7,970	11,170	15,486	4.8	3.4	14.9	20.7
Total Mega Manila		15,059	12,934	17,903	23,027	29,390	3.3	2.5	15.3	19.5

The concentration of people in the capital, which is more than 60% times higher than the national level, is explained by the concentration of the economic output in the capital (Castaneda 2016). Migration of people from the rural areas have been brought about the large concentration of employment and wok opportunities in the capital. Figure 2 shows the rapid expansion of urbanization in Metro Manila and in recent years its expansion in the nearby provinces (Boquet 2015). It boasts of one of the densest populations in the Philippines with an average of almost 20 thousand persons per square kilometer (Table 3) (Statista 2019; Castaneda 2016). It has no signs of slowing down with the average growth rate at 1.72% (Rith et al. 2020).

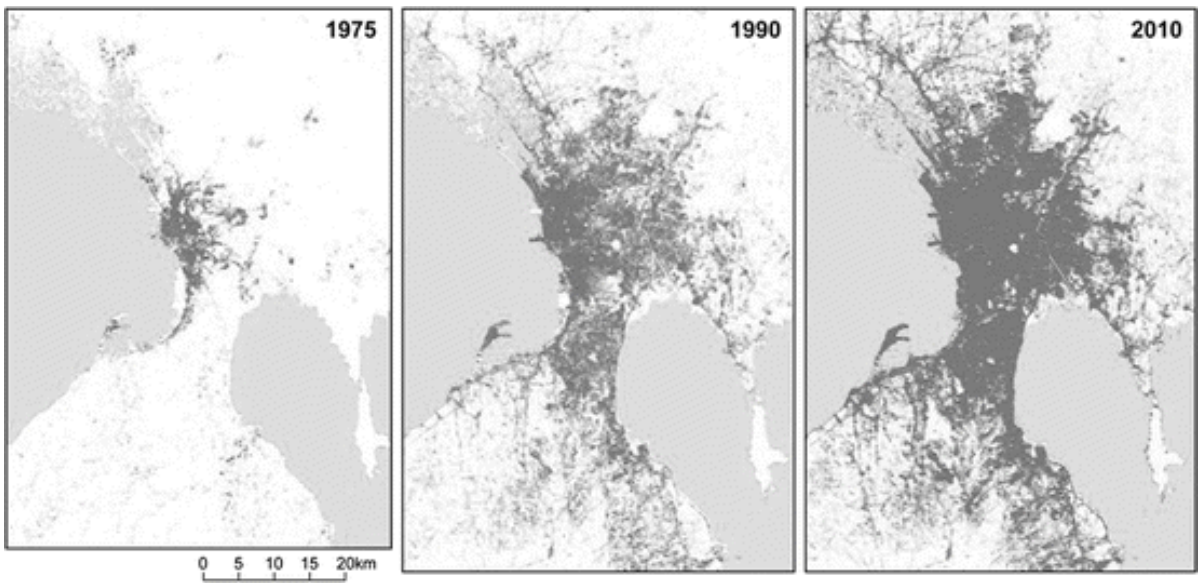

Figure 2. The rapid urbanization of Metro Manila brought by the growth in economy in the past decades. Source (Boquet 2015)

Figure 3 sums up the environmental concerns brought about the expansion and congestion of urban areas. The migration of people from rural to urban areas is brought about the large concentration of employment and work opportunities in the capital (Castaneda 2016). As people flock to the city centers. The monocentric urban development burdens the demand in the transportation network (Pojani et al. 2017). More importantly, the volume of migrants puts

strains in the housing infrastructure, health care, and transportation (UNESCO 2017). The competition for space in the city center has resulted to the informal settlements of migrants in the capital. These concerns make the whole region is highly vulnerable to disaster as caused by weak land use management, insufficient transportation service, poor waste management, etc. (JICA 2014b).

Figure 3. Environmental issues of Metro Manila.
Source (JICA 2014).

The expansion goes toward the provinces of Bulacan to the North, Rizal to the east, Cavite and Laguna to the south for the past 40 years (Figure 2) (Boquet 2015). The rapid urbanization in Metro Manila as well as its neighboring provinces brings diversified impacts on its land use, transport and environment, threatening sustainable development (JICA 2014a). According to JICA, the expansion of development and densification of Metro Manila to the nearby provinces must be taken into when planning as they are now part of the metropolis definition. Many

people that reside the neighboring areas commute everyday to Metro Manila – adding to the travel demand of the capital region. Hence, it is only practical and efficient to add these provinces in the transportation planning scheme of the capital (Almec 2019).

2.3.1 Modes of transportation

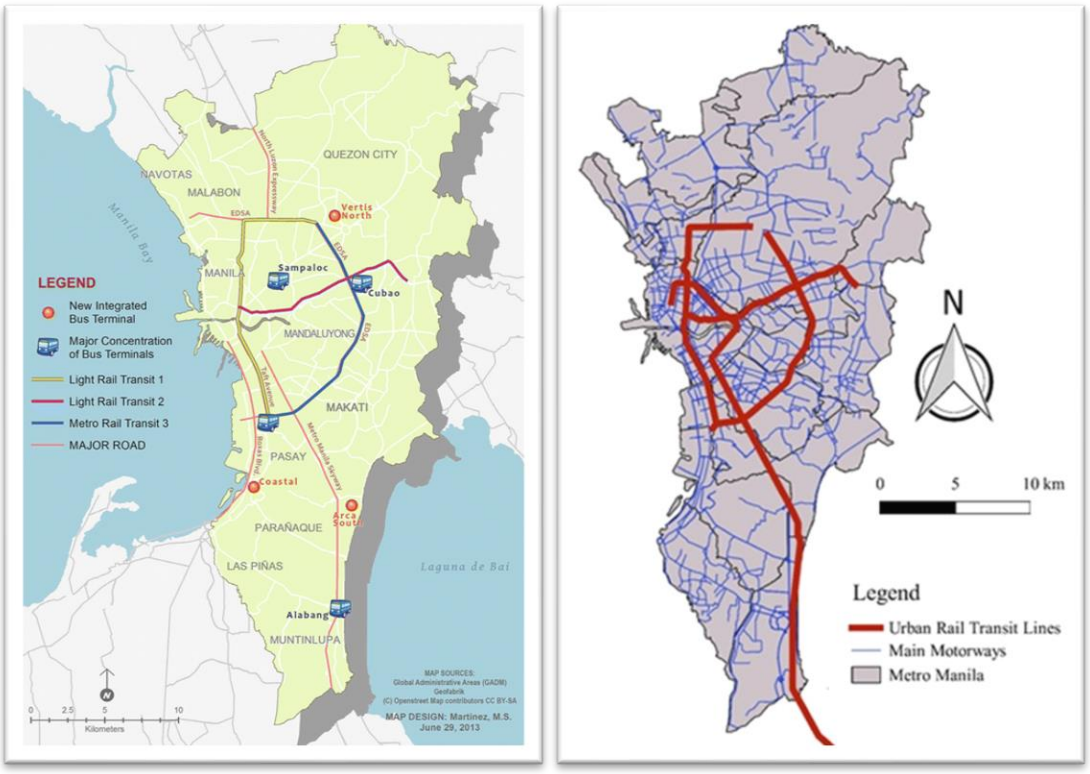

Figure 4. Transport lines (rails and main motorways) of Metro Manila.

The railway network in the country is mostly concentrated in Metro Manila. It is composed of 4 lines; the Philippine National Railways or PNR, Light Rail Transit (LRT1 and LRT2) and Metro Rail Transit (MRT). Due to the limited connectivity being covered by these rail lines, majority of commuters relies on the urban road transport, these includes the public utility vehicles. The PUVs are composed of jeepneys, buses, taxis, Asian Utility Vehicles (FX, multi-cabs), tricycle (motorcycle-powered 3-wheeler), and pedicab*(trisikad)* bicycle-powered 3-wheeler). This mixture in urban road transportation has been nearly constant since the 1960s.

Jeepneys/jeeps are probably the most popular Philippine icon and were once considered as "king of the road" due to their sheer number. These are refurbished American vehicles left after World War. Jeepneys are the most dominant public transport mode at 234,739 units in 2018 (Napalang et al.). Consequently, they also conduct the most number of trips in a day especially in greater capital region (Table 4).

Table 4. Daily trip composition in the greater capital region (2014)
Source: (JICA 2015)

Mode	No. of trips	% of public or private	% of Total
Public mode	*17,337*	*100.0*	*48.8*
Train	1,485	8.6	4.2
Bus	2,352	13.6	6.6
Jeepney	6,763	39.0	6.6
Tricycle	5,687	32.8	16.0
UV/HOV	26.1	1.5	0.7
Pedicab	631	3.6	1.8
Others	*156*	*0.9*	*0.4*
Private Mode	*7,263*	*100.0*	*20.4*
Motorcycle	2,948	40.6	8.3
Car	2,894	39.9	8.2
Taxi	315	4.3	0.9
Truck	270	3.7	0.8
Others	826	11.4	2.3
Walking	*10,913*	-	*100.0*
Total	35,503	-	100.00

Table 5 shows the number of motorized and non-motorized scattered in cities and town of Metro Manila. The proliferation of tricycles in smaller streets of the Metro Manila proves their significance in moving people in areas not being by the PUV routes. According to Siy (2021), tricycles are actually reactionary to the inadequacy of the public transport. However, their routes must be regularly monitored and regulated. The point of tricycles is for the community to have readily available means of transport to areas not being service by PUV routes but the

demands for these routes would usually grow. At this point, it is high time to evaluate the routes and maybe more rational to establish a PUV route in the area.

Table 5. The three-wheel motorized and non-motorized mode of transport that ply the local roads of Metro Manila. Source (Regidor et.al 2009; Philippine Statistics Authority 2015)

Name of city	Land area (sq.km)	Population (2015)	Tricycle (motorcycle-powered 3-wheeler)	Pedicab (bicycle-powered 3-wheeler)
Caloocan	53.3	1,378,856	13,464	*
Las Piñas	41.4	532,330	4,271	*
Makati	27.36	510,383	*	*
Malabon	15.76	363,681	4,600	1,473
Mandaluyong	11.26	305,576	3,819	245
Manila	38.55	1,660,714	*	*
Marikina	33.97	424,610	*	*
Muntinlupa	46.70	452,943	4,936	570
Navotas	10.77	245,344	2,000	2,300
Parañaque	47.69	552,660	*	*
Pasay	19.00	403,064	2,388	215
Pasig	31.00	617,301	10,350	*
Pateros	2.10	61,940	1,472	*
Quezon City	161.12	2,679,450	24,609	*
San Juan	5.94	125,338	125,338	*
Taguig	47.88	613,343	4,422	*
Valenzuela	44.58	568,928	11,630	1,7792
Total	638.55	11,496,461	87,961	6,595

Another distinct characteristic of the public urban transportation is that they are mostly old vehicles. Table 6 shows that state-sanctioned limit for the public urban transportation. This characteristic of public transport makes them accident prone at the same time emissions from these vehicles are considered to be higher.

Table 6. Vehicle age limit of PUVs according to regulations. Source (Napalang et.al. 2018)

PUV	Vehicle age limit
Buses and mini-buses	15 years
UV express	15 years

Taxi (unleaded/diesel)	13 years
Taxi (LPG)	15 years

2.4 Trends and mobility

In a study conducted by the United Nations Economic and Social Commission for Asia and the Pacific in 2014, it warned about the risk of reduction of modal share in public transport as people grow increasingly be dissatisfied with poor public transport and the increase of preference to private cars as it becomes more accessible with higher incomes(Mijares et al. 2014). Aside from that, due to convenience of moving amidst traffic, rising number of motorcycles have also been observed in Metro Manila. These motorcycles can move through traffic and can even occupy (available side streets) in attempt to move (Table 4).

In a study in 2014 that looked into the attractiveness of different modes of transport in Metro Manila, respondents indicated the preference for modes of transport with air-conditioning (LRT, AUV, ABUS) over the modes without air-conditioning (jeep, nbus). If available, the use of private is the most preferred choice of an urban traveler. The study highlighted that with increasing fuel prices, public would prefer public modes of transport if they would be comfortable(Fillone et al. 2007). The study also gave a glimpse of the preference of private cars over non-airconditioned public transport even at the anticipated increase in fuel prices (Figure 5).

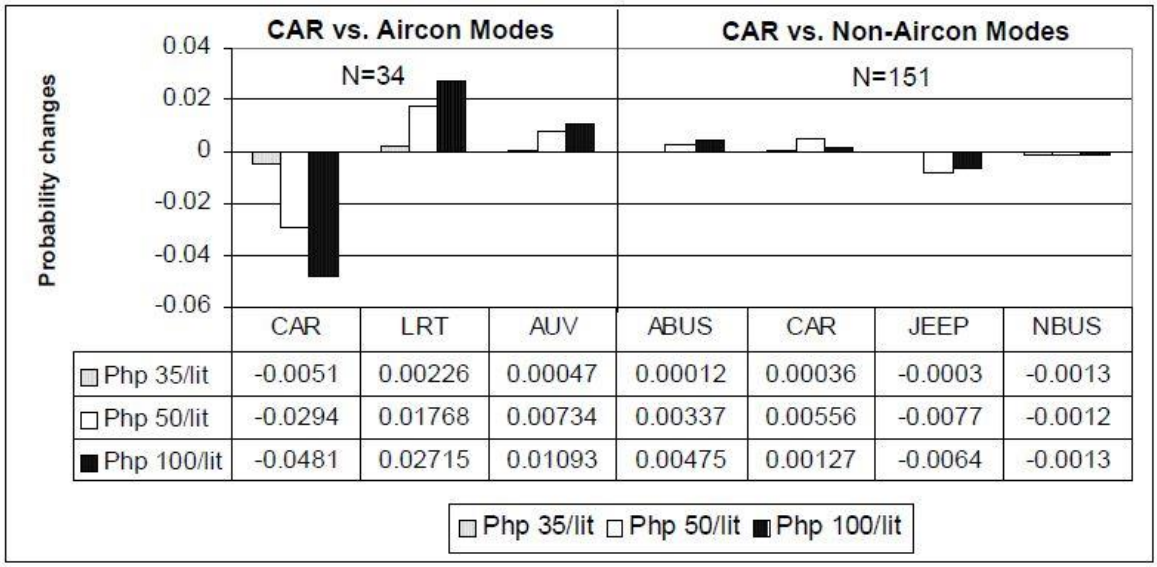

Figure 5. Attractiveness of modes of transportation (air-conditioned and non-airconditioned modes vs. car) with increasing fuel prices.
Source (Fillone et.al. 2014)

The study recommended the provision of public transportation that is fast, comfortable, convenient, and accessible (Fillone et al. 2007). The current status quo in the capital favors the use private cars. The implementation of the Unified Vehicular Volume Reduction Program (UVVRP) and the subsidized transport fares are seen as the main reason for this. The UVVRP imposes number-coding scheme in Metro Manila. The whole capital imposes standardized number coding scheme however LGU can implement more or less strict time limitations for it. For example, Makati City imposes 7AM – 8PM number coding scheme while the rest of the cities and municipality allows window time outside rush hours in the morning and night times. The train system was found to be the highly preferred commuting option because it is deemed comfortable and accessible. With the current state of the public transportation in the Metro Manila, this remains a great challenge.

Table 7. The current trend and desired utility ranking of available and proposed modes in Metro Manila. Source (Fillone et.al. 2014)

	Transport Policies	
	UVVRP, Subsidized public transport fares	More rail-based public transport, new air-conditioned buses and air-conditioned *jeepneys*, car parking policies, urban toll roads, public transport service route restructuring
Ranking	**Current Utility Ranking**	**Desired Utility Ranking in the "near" Future**
Highest	Private Car	Mass/Light Rail system
↓	Light Rail System	**New Air-conditioned Bus/Busway**
↓	*Jeepney*	**New Air-conditioned *Jeepney***
↓	AUV	AUV
↓	Air-conditioned Bus	Private Car
↓	Non-air-conditioned Bus	*Jeepney*
↓	Taxi	Non-air-conditioned buses
Lowest		Taxi

The covid19 pandemic has brought changes in the transportation sector in the country. With the imposition of one of the world's toughest lockdown, the national government halted the transportation service in the country (Olanday et al. 2020). The paralysis of the transportation sector during the pandemic has mainstreamed the use of bicycles to get to places. Provision of bicycle parking in all of the rail stations when the rail system returned operation was one of the changes brought by the "normal"(Move As One Coalition 2021b). The transport department has also tried to establish protected bicycle lanes even on EDSA – one of the busiest streets in the capital.

Though it may have brought to attention the use of alternative modes of active transportation, the transport workers suffered a lot. As the road transport riders relies on the day-to-day wage, this has left many drivers in destitute and despair (Olanday et al. 2020). Many even have resorted to begging just to be able to feed themselves and their families.

2.5 Road transport governance and decision-making

Transport governance in the Philippines involves a variety of agencies. The Department of Transportation (DOTr) is the primary agency mandated to formulate policies and implement plans, programs, and projects. The Land Transportation Office (LTO), Land Transportation Franchising and Regulatory Board (LTFRB), and the Office of the Transportation Cooperatives (OTC) are the 3 key transport agencies under the transport department for road-based public utility vehicles ((Sunio et al. 2019). The regulation and supervision of franchises to buses, AUVs and jeepneys as well as the control of fare are the main responsibilities of the LTFRB. The registration of all motorized land-based transportation vehicles and licensing of drivers are the responsibilities of LTO (Sunio et al. 2019). The promotion of industry consolidation of small-scale operators into transport cooperator is the focus of OTC.

In Metro Manila, the transport department and its attached agencies, local government units and the Metropolitan Manila Development Agency (MMDA) are involved in its transport governance. Table 15 summaries the roles of the key transport institutions and their mandates. The plurality of the these agencies and units have sometimes been the source of overlapping and confusing transport and traffic guidelines in the capital (De Leon n.d.). Theoretically, the MMDA is in-charge of addressing metro-wide urban problems. However, the plurality of agencies in the capital poses a great challenge in how they would conduct their function. (Boquet 2015).

Table 8. Key transport institutions in the Philippines and their mandates.
Source (Suzara et.al. 2021)

Agency	Mandate

Department of Transportation (DOTr)	The primary policy, planning, programming, coordinating, programming, coordinating, implementing and administrative entity of the government on the promotion, development, and regulation of a dependable and coordinated network of transportation and communications systems, as well as in the fast, efficient, and reliable transportation services.
Land Transportation Franchising and Regulatory Board (LTFRB)	The office mandated to promulgate, administer, enforce, and monitor compliance of policies, laws, and regulations of public land transportation services.
Land Transportation Office (LTO)	The sectoral agency of the DOTr tasked to register motor vehicles, issue driver's/conductor's licenses and permits, enforce transportation laws, rules and regulations and adjudicate apprehension cases.
Office of Transportation Cooperatives (OTC)	This office is tasked to administer and/or manage the promulgation and implementation of rules and regulations governing the promotion, organization, registration (accreditation) supervision, and development of the transportation cooperatives nationwide.
Metro Manila Development Authority (MMDA)	The transport and traffic management service of this office includes the formulation, coordination and monitoring of policies, standards, programs, and projects to rationalize the existing operations, infrastructure requirements, the use of thoroughfares, and promotion of safe and convenient movement of persons and goods; provision for the mass transport system and the institution of a system to regulate road users; administration and implementation of all traffic enforcement operations, traffic engineering services and traffic education programs, including the institution of a single ticketing system in Metro Manila

Overlapping and redundant franchises are also among the trends that results to the congestion in the country. Operators can apply for route franchise from the LTFRB based on the demand that they see on the ground. The current transportation system forces the transport drivers to compete themselves for passengers. The fare system is tricky in a way that it must be socially acceptable yet must ensure that operators are still getting a return on their investments (Mijares et al. 2014). Compared to the rail-based transportation mode, the road-based transport receives no subsidy from the government.

Table 9. Fare setting objectives of the urban road public transport
Source (Mijares et.al. 2014)

Public transport mode	Fare-setting objectives		Consequences	
	Social acceptability	Financial viability	Impact on fares	Fiscal burden
Rail-based	√		Artificially low fares	High subsidy
Road-based	√	√	Profitable fare	No subsidy

Per regulation, operators may request for fare adjustment following changes in diesel prices or inflation (Mijares et al. 2014). However, the fare adjustment would only cover the expenses for the operations and do not reflect on the take-home pay of the drivers. Table 10 shows the basic fare scheme of public urban transport in the country. We can deduce from this computation the average take-home for a day of driver to be barely just enough for living expenses.

Table 10. Distance-based fare structure for the road transport in 2004 and 2012.
Source (Mijares et.al. 2014)

Transport mode	Base fare (in USD) (first 4-5 kms or frst 3-4 stations)		Incremental fare (in USD) (per additional km or station thereafter)	
	2004	2012	2004	2012
Ordinary bus	0.13	0.21	0.026	0.039
Aircon bus	0.19	0.25	0.031	0.046
Jeepney	0.12	0.17	0.021	0.029
AUV	0.21	0.31	0.10	0.10

*USD 1 = PHP 50

In the past, there have been several efforts to reform the transport sector in the country. The success of Bus Rapid Transit (BRT) particularly in some emerging countries has inspired the GoP to initiate its own. In emerging economies, BRT yields major socio-economic benefits,

reducing costs, travel times, accidents, and emissions(Pojani et al. 2017). However, the plans did not materialize.

2.6 Transportation reform through the PUVMP

2.6.1 Program objectives

The PUVMP program (dubbed as Road-Based Public Transport Reform Program) was formulated when the incumbent President and the DOTr Secretary promised to alleviate congestion within six months into office in 2016 (Sunio et al. 2019). (Program design is in accordance with existing laws that aims to reduce air pollution in the country such as the Clean Air Act of 1999 and the 2015 Administrative Order from the Department of Environmental and Natural Resources (DENR) which updates fuel requirements to Euro 4(Sunio et al. 2019). The strong political will of the incumbent administration envisions a restructured, modern, well-managed and environmentally sustainable transport sector (Sunio et al. 2019). The new design of the PUVs must transition to air-conditioned modern units equipped with several amenities such as GPS, CCTV camera, free Wi-Fi onboard, automatic fare collection system, and PWD-friendly design.

The program is in compliant with the existing laws and policies that aims to address environmental concerns in the country: RA (Republic Act) 9729 Climate Change Act of 2009, National Framework Strategy on Climate Change 2010-2022 and the National Climate Action Plan 2011-2028, Philippine Development Plan 2017-2022, Philippine Energy Plan 2018-2040,

National Climate Risk Management Framework of 2019, Sustainable Finance Policy Framework of 2020, and the National Transport Policy.

2.6.2 Program components

A briefer paper of the LTFRB narrated the program's complimentary gears: (1) fleet (PUV) modernization; (2) Integrated Terminal Exchange; (3) Bus-Rapid Transport; and (4) Intelligent Transport System(OTC 2020). According to a study by Sunio (2019), the program is said to overhaul the existing transport regime through its ten components as summarized below:

Table 11. Summary of the components of the PUVMP as outlined by Sunio et.al (2019).

Components	Description
1. Regulatory reform	The Omnibus Franchising guidelines "envisions a restructured, modern, well-managed and environmentally sustainable transport sector where drivers and operators have stable, sufficient and dignified livelihoods while commuters get to their destination quickly, safely and comfortably"
2. Local Public Route Transport Planning (LPTRP) by the local government	Routes will be rationalized and planned based on the needs of the local government. This is strengthening the decentralization power of the LGU as mandated by the Local Government Code. Routes will be based on passenger demands and existing road network.
3. Route Rationalization Study	Using sound data, this study will be used to determine appropriate mode, quantity, and service characteristics of the public transport service in each corridor which will make the routes more responsive to passenger demand and ensure that the hierarchy of roads and modes of transportation are followed. Whereas the local public transport route (second component) is carried out by LGUs and the provincial government, the route rationalization study component is to be rolled out in Metro Manila and its surrounding provinces (collectively called Mega Manila). In PUVMPs terminology, second and third component is a matter of geographical coverage.
4. Fleet Modernization	The current public transport vehicle units will transition to cleaner vehicles (Euro 4 standard or better). These vehicles must be equipped with electric devices such as GPS, CCTV, Wi-Fi, and automatic fare collection (cashless transactions).

	The new jeepneys must meet international safety standards (e.g., through curbside instead of rear-end entry) and provide more comfort since people can stand on the vehicle.
5. Industry Consolidation	Operators must form a cooperative, consortium, or corporation, to be granted a PUV franchise. GoP requires that individual franchise holders must group themselves together and operate their units together under a single entity.
6. Financing PUV Modernization	A special loan program with government financial institutions (Landbank of the Philippines and the Development Bank of the Philippines) can be availed by the operators for up to 95% of the total acquisition cost of the unit and payable up to seven (7) years. The remaining 5% will be the equity of the borrower which the government is said to roughly match with the Php 80,000 (USD 1,600.00) subsidy. The GoP also introduced the Automatic Fare Collection System (AFCS) that would facilitate automatic repayment to the banks.
7. Vehicle Useful Lide Program	The old PUVs that are more than 15 years old must be surrendered for scrapping. The proceeds can be used to augment the funds to finance the new PUVs.
8. Pilot Implementation	The program is piloted in local government units and full roll out is to set in place by January 2021.
9. Stakeholder Support Mechanism	Introduced in 2018, this component of the program aims to provide training, social assistance, livelihood and job opportunities to drivers, operators and other stakeholders affected by the modernization program. LGUs are also advised to coordinate with Technical Education and Skills Development Authority (TESDA), Department of Labor and Employment (DoLE), Department of Social Work and Development (DSWD), and other relevant agencies to explore opportunities with the displaced and disenfranchised stakeholders.
10. Communication	In July 2019, the DOTr launched a nationwide caravan with the aim to campaign the implementation of the program in 32 major cities of the country.

*Php 50.00 = USD 1.00

Sunio (2019) argued the potential of the program in easing the congestion in the capital as it aims to make public transport to be perceived as superior to using private car or motorcycle. During its launching in 2017, the finance department of the national government have committed in making the program financially-viable to jeepney drivers through state-financed loan (Talabong 2017).

The program is composed of ten components that is said to be a holistic approach that tackles the urban road transportation (Sunio et al. 2019). The program addressed one of the gaps identified in the local government code (Republic Act 7160 – Local Government Code of 1991) in the country which is the decentralization of the transportation planning powers to the LGU(Sunio et al. 2019). As justified by the premised of this law, LGUs are in a better position to address the needs of their constituents. The creation of the LPTRP is true for all local government units except for the Mega Manila [3]Area.

One of the most important components of the PUVMP is the delegation of the transport route planning to the LGUs. With the PUVMP, the DOTr has directly partnered with the Department of Interior and Local Government (DILG) to fully devolved to Local Government Units (LGUs) the local transport planning with the rationale that they are better placed to understand local needs and environments than the national transport department (Sunio et al. 2019). In the case of Metro Manila, wherein intercity travel happens even at short-distance travel, the planning has been designed to be based on the Metro Manila Urban Transportation Integration Study (MMUTIS) Update and Capacity Enhancement Project. This project is meant to be undertaken by an outside consultant/consulting agency. According to the bid bulletin by the LTFRB, "the project aims to understand the public transportation supply and demand situations in the MUCEP area, identify rationalized routes into 3 major categories such as Immediate Priority, Medium Term and Long Term

To organize the very fragmented nature of the public urban transport, the program set forth guidelines in industry consolidation through setting up cooperatives. According to LTFRB, cooperatives is the easiest and recommended way for the jeepney sector to consolidate. The

[3] Also known as the National Capital Region Plus (NCR+). Coined and classified for community quarantine/lockdown classification as a response to the covid-19 pandemic.

following are the benefits of cooperatives as mandated by Republic Act 9520, the law that guides the establishments of cooperatives[4]:

1. Democratic management of cooperatives
2. Open and voluntary membership
3. Tax exemptions
4. Financial support from the government
5. Secure franchise from active or potential routes for public transportation
6. Members receive dividends

[4] RA 9250 benefits as published by the DOTr OTC in their official Facebook page. The Facebook page was one of the information vessel of the OTC. Facebook is the largest social media platform in the Philippines and being supported by free data. Hence, making it accessible to the general public.

2.7 Justification of research

In a survey done by the Social Weather Stations, 81% of Filipino adults believe that roads in Philippine cities and municipalities will be better off is public transportation, bicycles and pedestrians are given priority over private vehicles (Social Weather Stations 2021). Given this demand from the public, it is worth the time to look into the program that promises to improve the transportation situation in the country. The extension period of the transition period until June 2021 in Metro Manila puts this thesis to evaluate its process. There has been no literature yet on its program evaluation that covers the period of June 2017 – June 2021 as well as evaluating the program based on just transition and sustainable transport. The concept of just transition is evolving. In some cases, it could mean negatively because the sometimes it fails to deliver its promise of livelihood in exchange of the environmental compromise. The case of Philippines' transport sector is also on unique disposition as their plight would pale over the existing Labour Code. This thesis is in good position to look at these factors.

3 Methodology

3.1 Method

The examination of the implementation of the PUVMP is made possible through the use of a case study. Since the main question being implored by this study is how the program is being implemented then a case study is preferred (Yin 2009). Case study provides a detailed examination of a small sample which in this case provided a good standing point to study its implementation in the capital region of the Philippines (Tight 2010). Studying this case aims to explore what can be learned from it (Denzin et al. 2008). To do this, it is crucial for this study to optimize understanding of the case through meticulous attention to its activities by triangulation, understanding contexts, and activities (Denzin et al. 2008). Denzin et.al. (2008) also mentioned experiential knowledge could aid in understanding the case. Hence, my firsthand experience as a commuter also provided me with additional insight to understand the situation on the ground.

The program is said to be very ambitious in a sense that it aims to reform the road transportation in the country. The reform is composed of ten (10) components. The study focuses on the process evaluation for the purpose of knowing the details on brought the identified results or lack thereof (Steckler et al. 2002). In essence, conducting process evaluation aims to answer why certain results were achieved (Steckler et al. 2002).

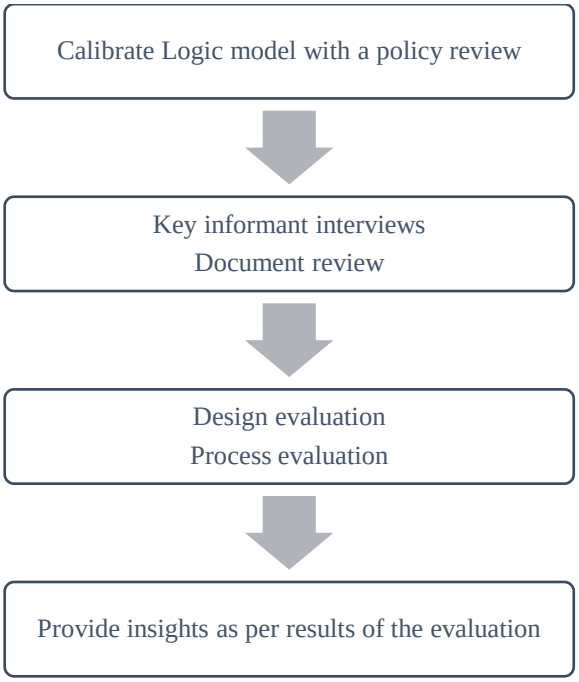

Figure 6. Conceptual framework of the study

The logic model shall be made in order to examine the components of the program for evaluation (*Logic Model and Evaluation Workbook* n.d.). The "logic model" will simplify the relationships that is at play in the program: what is put into the program (resources), what the program does (activities and outputs), and what the results (outcomes) the program produces (*Logic Model and Evaluation Workbook* n.d.). Document analysis of scholarly writing will also be used in the study. The model will be linked key components of process evaluation such as context, reach, resources, barriers, and fidelity in order to arrive an objective observation (Domingo et al. 2018); Steckler et al. 2002). For this study, there definitions will made used in the process evaluation.

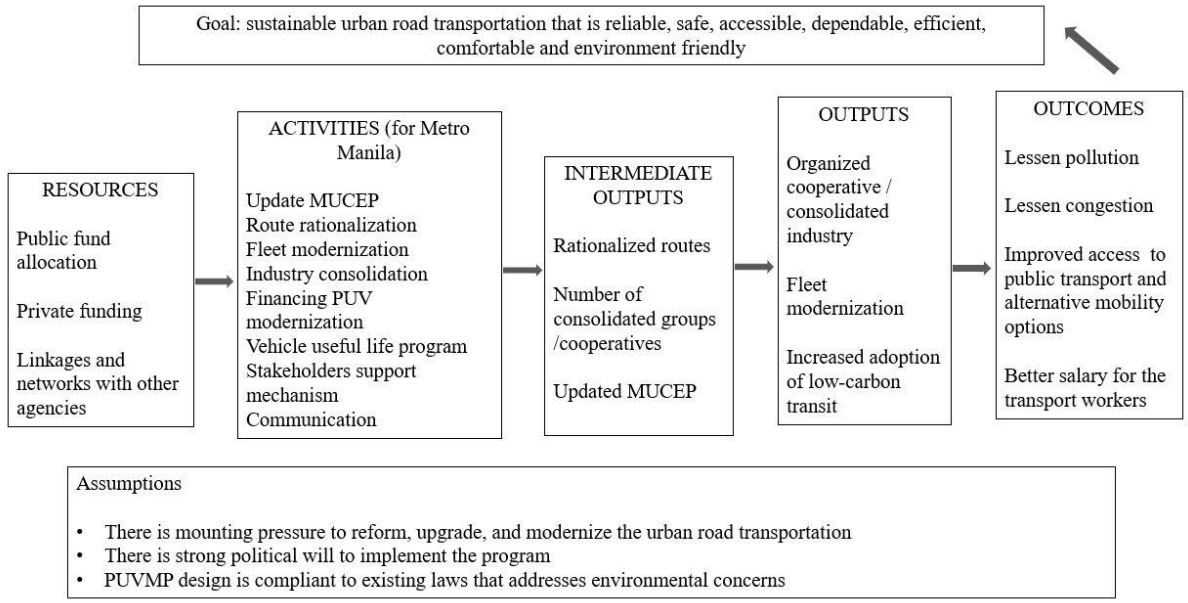

Figure 7. Recalibrated logic model of PUVMP.

Table 12.Key components of process evaluation.
Source (Steckler et.al 2002).

Component	Definition
Recruitment	Procedures used to approach and attract participants for corresponding parts of the program
Context	External factors belonging to the social, political, and economic environment that may influence intervention
Reach	The extent to which the program contacts or is received by the targeted group
Resources	Materials or characteristics of participants necessary to attain the program goals
Barriers	Problems encountered in reaching the participants
Fidelity	Extent to which the intervention was delivered as planned Function of intervention providers

The components of the recalibrated logic model is linked together by if-then relationships (Domingo et al. 2018). This establishes this relationship: if there is huge support and if resources are available for the program, then the components of the program can be carried out and implemented and if these components were carried out in its fidelity, then outcomes and outputs can be achieved(Domingo et al. 2018). The following figure shows in recalibrated logic model of the implementation of the PUVMP with focus in Metro Manila.

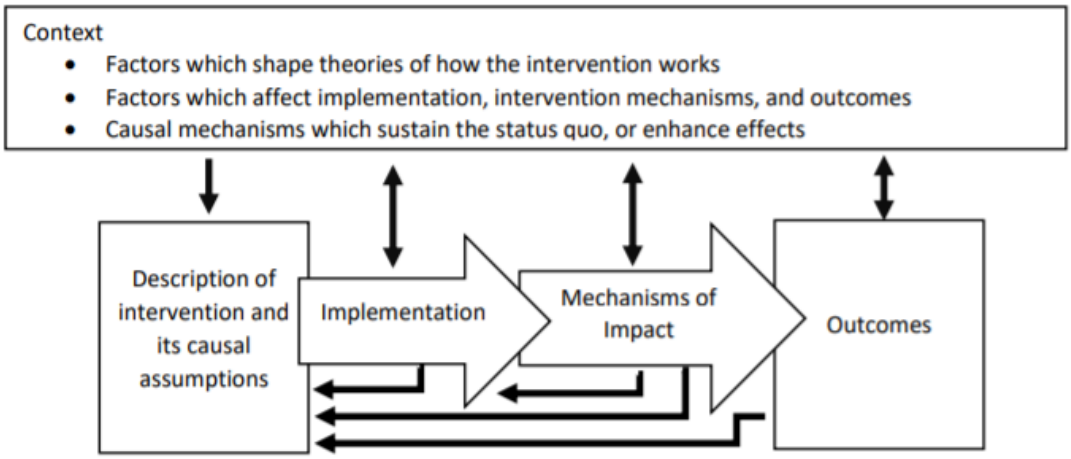

Figure 8. Process Evaluation Framework.
Source (Moore et.al 2015).

Key informant for interviews were identified through snowball sampling. Aside from convenience, this sampling method facilitated the identification of key actors in the implementation of the program. Informants are ideally the key persons in the crafting of the program from the Department of Transportation (DOTr) and the Land Transportation Franchising and Regulatory Board (LTFRB); stakeholders of the program include the officers from the implementing agencies and representatives of transport groups.

Table 13. Guide questions and key components in process evaluation framework.
(As adapted from Domingo et.al (2019)

Evaluation questions	Link to activities or target population in logical model	Indicators	Component
Who are the target beneficiaries?	Institutions, transport workers, commuters	Stakeholders identified in the policies	Reach Recruitment
How did the implementing agency capacitate those affected by the policies?	Institutional changes, trainings/programs as identified by stakeholders	Activities conducted to consolidate industry,	Fidelity Resources

What are the impacts or effects of the program to its target beneficiaries?	Documents for the implementation of the program	Briefers, press releases	Fidelity
What are the challenges encountered in the implementation of the PUVMP?	Narratives on the consolidation scheme	Feedbacks gathered from the DOTr as the implementing/lead agency, stakeholders (transport groups, transport officer) Briefers, progress reports	Fidelity

3.2 Data Collection

Initial stages of the research include data collection related to the policies that gave life to the PUVMP. This stage helped in calibrating the logic model of the program coupled with the policy review. This entailed collection of secondary data: reports, legislation and policy documents, program information documents, publications, and journal articles. The official Facebook page of the DOTr as well as the PUVMP Project Management Office was also scoured as it is a repository on self-appraised progress.

Table 14. Summary of data collection methods and tools used.
As adopted from Sunio et.al (2019)

Evaluation question	Data sources	Data collection method	Data collection tools
How is the PUVMP being implemented to solve the transportation crisis in Metro Manila	DOTr, LTFRB, OTC,	Document review Interview	Policies (department order, Memorandum Circular, Joint Memorandum Circular) Questions developed for the study

Who are the target beneficiaries?	DOTr	Document review Interview	Questions developed for the study
How did the implementing agency capacitate those affected by the policies?	DOTr, LTFRB, OTC, transport groups / workers	Document review Interview	Questions developed for the study
What are the impacts or effects of the program to its target beneficiaries?	LTFRB, OTC, transport groups / workers	Document review Interview	Questions developed for the study
What are the challenges encountered in the implementation of the PUVMP?	DOTr, LTFRB, OTC, transport groups / workers	Document review Interview	Questions developed for the study

The study consisted of conducting semi-structured interviews of key people in the implementation of the program. The study managed to get the perspectives of the people from the transport department (3), transport groups (2), and transport officer from one of the cities in Metro Manila, and (3) in the local government units. Key informants from the transport department included a key staff in the Office of the Assistant Secretary for Road Transport and Infrastructure, and two of the project managers for the PUVMP. Representative from the transport workers are the transport leaders from one of the biggest transport union in the country while the perspective from the local transport officer came from the transport department head of Pasig City.

3.3 Data Analysis

Data analysis will be made following the components of the process evaluation:

Recruitment. This will determine whether the implementation and initiatives followed the plans of the local government units.

Context. This refers to the extent to which external factors belonging to socio-political and economic environment affected the interventions from the national government down to the local governments (Domingo et al. 2018).

Reach. The measure of how many stakeholders is included in the intervention. This component seeks to determine if the policy have been translated into (LTFRB, local government units, transport operators).

Resources. This will probe if the participants are given necessary materials or capacitated towards the goal of the program.

Barriers. This will probe on the obstacles and problems to reach the participants in the implementation of the program.

Fidelity. This component will look into the harmonization of the program to check whether the coverage and outcomes from the data gathering coincided with the outcomes set by the policy.

3.4 Limitations in the study

The conduct of this study was limited by the time and travel constraints brought about by the covid-19 pandemic. The interviews were conducted online via the most convenient online platform and time for the stakeholders (Zoom/Viber/Facebook Messenger/Whatsapp) Purposeful and snowball sampling were chosen to be able to identify the right person to interview. Difficulty in scheduling as well as non-existent/unresponsive telephone lines and emails were encountered despite numerous attempts to talk with more respondents.

Nonetheless, the conversations with the stakeholders contacted were very enlightening and provided enough information for the conduct of this study.

The scope of the study covers only the defined transition implementation period of the program and its implementation in Metro Manila. The study will be conducted in the national language of the Philippines, Filipino and English.

3.5 Ethical guidelines

Ethical protocol was followed during the conduct of the study. Documentation process included recording of the interviews that were conducted via Zoom and Facebook Messenger. Permissions were asked prior to the start of recordings. The researcher also guaranteed the use of the data gathered during the interviews be used solely for academic and research purposes. In some instance, copy of the transcript was requested by the interviewees for sign off. Draft of the transcript was sent for edit and to also give the chance for the interviewees to clarify some things in the documentation.

4 Results and Discussion

4.1 Governance aspect of the PUVMP

The DOTr plays a critical role in rehabilitating and reforming the transportation situation in the country. As a lead transport agency, they have the power to push for transportation projects that should be aimed at benefiting the commuting public. In this regard, the transport leaders were able to marshal political powers necessary to push the program into reality.

Table 15.Roles of the key institutions in the implementation of PUVMP

Agency	Role in the implementation of PUVMP
Department of Transportation (DOTr)	The policy body that released the OFG that served as the basis for the PUVMP.
Land Transportation Franchising and Regulatory Board (LTFRB)	The office that is mainly tasked in the implementation of the PUVMP which focuses on the route plan approval and franchise awarding to recognized transportation cooperatives and corporations.
Land Transportation Office (LTO)	The office is tasked to register moto vehicles, issue driver's/conductor's license and permits, and enforce transportation laws.
Office of Transportation Cooperatives (OTC)	The office is tasked in the industry consolidation and provides supporting task in the implementation of the program.

It is worth noting that despite several attempts of the national government to rehabilitate the urban road transportation, this is the probably one of the programs that managed to take off right from its implementation. Despite the resistance from the transport worker groups, the strong political will of the incumbent administration is pushing forward its full implementation. Given the numerous attempts to implement reform in the urban road sector, the implementation of the PUVMP is actually one of the programs that have materialized. The strong political will of the incumbent administration is a huge factor in its materialization. The strong

pronouncements about “modernize or be left behind” have been very consistent ever since the program launching. However, some policies do not go consistent with the program implementation. Some of them included the removal from the priority projects the Bus Rapid Transit (BRT) for the EDSA-central business districts and Bonifacio Global City – Ninoy Aquino International Airport (NAIA) lines.

The same strong political will that made this program possible could also endanger the continuity of the program come the ushering of the new leadership in 2022. The Philippines political landscape greatly affects the policies and programs being prioritized and funded. The highly political nature of this program could mean scrapping or defunding of this program in order to pacific the resistance from several groups. It is therefore necessary to recognize that future development relies largely on their further support to the program.

This program has put into sideline the MMDA, one of the key agencies in Metro Manila. It is understandable that the DOTr is focusing in Metro Manila due to the economic importance of the capital. However, focusing the mandate of the agency is to take care of transportation sector nationwide. Given the existence of MMDA, it would be better if they can be given more active role in the planning and implementation of this program. Given the complexity of the governance structure in transportation scheme, the Metro Manila Development Authority is the closes thing that the capital has in terms of consolidating the transport plans in the region.

The capital region can take find inspiration from Seoul, South Korea with how it fixed its urban road transportation. South Korea’s capital underwent major reform in the public transportation through infrastructural improvements, integration of ICT in transportation planning and operations and comprehensive overhaul of transportation policies. The experience of Seoul,

South Korea introduced a wide range of urban road transport reforms that addressed congestion, air pollution, traffic injuries, and serious funding shortages (Pucher et al. 2005).

4.2 Sustainable mobility

In principle, the program adheres to the Avoid-Shift-Improve approach to transition to low-carbon transport sector. The objective of the program is to make the public transportation safe, efficient, and reliable which also aims to make commuting attractive to the public.

Table 16. The modern PUV units.

Modern PUV units		
 	 	 
Class 1	*Class 2*	*Class 3*

The modern PUVs currently plying the streets of Metro Manila as well as the whole Philippines have complied with the minimal features mandated by the OFG. The modern PUVs are fully

air-conditioned, has ample legroom for its driver and Euro 4 compliant. The modernized PUV has 3 classifications (**Error! Reference source not found.**):

a. Class 1 – good for narrow barangay, municipal, or provincial roads with lower transport demand; cheaper vehicle option
b. Class 2 – replacement of regular jeepney but with ceiling height that would allow average Filipino to stand in the middle; can carry up to 23 passengers
c. Class 3- front facing variants and replacement of UV express; designed for point-to-point routes attributed to its more relaxed seating arrangement; can carry up to 23 passengers

According to the latest report released by the OTC, there are currently 24 registered transport cooperatives in Metro Manila (OTC PUVMP Project Management Office 2021). These transport cooperatives operate a total of 649 modernized units.

Table 17. Summary of the transport cooperatives (TC) and the number of modernized units (as of 31 March 2021)
Source: (OTC PUVMP Project Management Office 2021)

Region	Number of TCs	Number of modernized PUVs
NCR	24	649
CAR	2	45
Region I	4	34
Region II	5	47
Region III	11	178
Region IV	13	280
Region V	3	52
Region VI	4	94
Region VII	7	375
Region VIII	1	47
Region IX	1	5
Region X	3	75
Region XII	5	53
Caraga	4	44
Total	87	1978

Transport cooperatives in Mega Manila have iterated the slow process in LTFRB. Despite submitting earlier, the documents and LTFRB promising processing at 10 days, the recognition of their cooperatives could take 20-40 days. Aside from that, cooperatives have also raised the redundancy and confusion of the documents needed to submit. This is a challenge institutionally as the implementing agency need to recalibrate and review its system given that the transition period has already ended. The number of transport cooperatives recognized by the agency is also at alarming rate given the number of routes that should be serviced by the public transport in Metro Manila. Reform should also happen internally.

As one of the transportation expert and practitioner in the Philippines, Mr. Siy has pointed out that transportation reform would take years and requires massive financial investment on the modernization. It would take deliberate measures and long-term vision and planning and not just short-term and reactive measures to events and crisis. The sticking point that must asked for the program is if the government is willing to fund this program enough.

The pandemic has provided opportunities towards the promotion of other modes of transportation in the country. The crisis paved way for the promotion of biking (dubbed as active transport) during and after the pandemic ((Department of Health et al. 2021). The travel restrictions imposed to curb the covid19 transmissions in the country provided an opportunity for the transport officials to rethink and revisit policies on alternative forms of transport. The creation of bike lane networks on EDSA, one of the major thoroughfares of the capital, was brought by the demand by the increased interest on biking. To address the safety of the bikers and cyclers, the transport department released Active Transport Manual that aims to raise awareness on road safety and traffic rules. The move can be regarded as a changing shift in the transport policies. One of the transport advocates group pointed out that the move is a start to

shift away from private-car-oriented transportation policies to a more inclusive, people-centered and environment friendly approaches (Bacungan 2021). This thesis sees that the PUVMP and covid-19 pandemic provides an "urban opportunity" to enhance the transportation situation in the country. The potential to create green jobs, lower emissions, and to create access and reshape society is very huge (Dave et al. 2021). A study by Technical University of Denmark (2019) iterated that city "requires mobility solutions that are sustainable, secure, inclusive and integrated with customer-centric infrastructure and services."

In line with the concept of sustainable mobility, the development of road-based public transportation should also include giving choices to commuters. This can include development of infrastructures that can cater walking and cycling. Engaging more people to shift to more active choice of transport would be more in line with climate action. However, even with this choice requires deliberate effort on urban planning, policies and infrastructures that would guarantee and accessible pathways. As Li (2011) pointed out, the path towards sustainable transport requires effective partnerships and involvement of a wide range of stakeholders. At the same time, transportation governance must be articulated and aligned with urban development plans in relations to land resource allocations(Li 2011).

According to the study conducted by the Philippine Council for Industry, Energy, and Emerging Technology Research and Development (PCIEERD) and the University of the Asia and the Pacific-School of Social Engineering (UA&PSSE) wherein they looked at the recyclability and recovery of vehicle components of old PUVS, it was found that the dismantled components of a jeepney model can amount as much as PhP 28,000-58,000.00 (USD560-1160) without the engine (Nazario 2020). The scrappage of end-of-life vehicle jeepneys is also one opportunity for green jobs as the establishment and maintenance of the scrappage facilities

could generate jobs and other business opportunities(PCIEERD 2020). According to the same study, engines of the old jeepneys could be upcycled for agriculture purposes and other small-powered machines such as generators(PCIEERD 2020). Scrappage would require the establishment of a dismantling facility hub in order to lessen the health and environmental hazard posed by the old vehicle units(PCIEERD 2020) .

As of this writing, environmental and mobility groups have been very active in opposing a mega project to build highway over Pasig River that aims to connect Manila City to Pasig City. This is another example of project that will make traffic congestion worse and only create induced demand (Jacolbia 2021). Several mobility advocates called for better use of the money through projects that will give more people smarter and greener choices that will reduce transport-related footprint (Move As One Coalition 2021a). Instead of building six-lane elevated highway over the river, it is recommended to pursue the option to enhance the public transportation modes especially systems and urban road transport thru bus rapid transit (BRT) (Jacolbia 2021). In a webinar organized by the National Center for Transportation Studies that aims to advocate data-oriented transportation planning for local government units. The webinar and the information system introduction aim to capacitate local transportation managers in developing their own transportation route plan. As a result of some simulation in the country, the transportation experts in the country have advocated for these solutions in the traffic management; (1) “check if public transport is too much and may be reduce,” (2) “build new roads or widen existing roads,” (3) “relocate development of dense trip-making areas,” and “create policies that limit private cars.” These measures are very telling for the existing car-centric transportation regime in the country given that these measures are coming from the transportation experts in the country.

4.3 Just transition in the transport sector

On its meaning

Among the identified problems of the transportation landscape in the country is the heavy reliance on the private sector in the provision of public transport. This is supposed to be being addressed by the rationalization of routes and the regulation of franchise awards to consolidated cooperatives. However, with the current scheme of things in consolidation of cooperatives and the awarding of franchises to newly established franchises instead of prioritizing the displaced workers, this might lead again on relying on the private sector to dominate the landscape. This also runs opposite to what the program should do to the transport workers. According to Siy (2021), aside from the program not really revolutionizing the commuting experiences, many do not feel that they are being phased out for the sake of modernization (A. Siy 2021). The program has been tagged as "anti-poor" due to the cost need to purchase the modernized jeepneys (Talabong 2017). The new vehicle cost around PhP 1million (~USD 21,000). An average driver only takes home what is in excess of the "boundary" which is usually around PhP 200-300 (USD 4.2 – 6.3) per day. The program also introduced a 5-6-7-8 scheme: 5% equity or down payment; financing for the modern vehicle units will have 6% interest rate; 7% repayment period; and the national government will provide PhP 80,000 (USD 1,600) subsidy per unit. Even with the income of the drivers pre-pandemic, the cost of modern unit is still overwhelming.

The employment situation of the transport workers in the country is quite peculiar. According to ILO, informal employment is considered as such " if their employment relationship is, in

law or in practice, not subject to national labour regulation, income taxation, social protection or entitlement to certain employment benefits (advance notice of dismissal, severance pay, paid annual or sick leave, etc)(OECD/International Labour Organization 2019).” Given this situation, the Labour Code of the Philippines provides some protection as long as there is a clear capital-labour or employer-employee relationship. However, the transport workers in the Philippines falls outside some of the protection from the Labor Code (Pascual 2006).

On the workers' demand

The fragmented nature of the transport groups has also resulted to the several transport groups to organize themselves. The NCTU, one of the biggest transport coalitions in the country, has been very active in advocating for the welfare of its members. During the early consultations of the program, transport groups have demanded the continuous dialogue of the implementation of the program, 5-year moratorium on PUJ phase-out as preparatory period, end to the importation of surplus or waste vehicles from other countries, state subsidies or assistance fund for modernization(The National Confederation of Transport Workers' Union 2016). The situation of the transport groups is a mirror of the challenges faced by coal miners when the 'Just Transition' was introduced to them. The transport workers are willing to let go of their old units if only they can be assured of their livelihood.

According to DOTr, the transition period is mainly about industry consolidation. However, the when the lockdown measures in Metro Manila were lifted, transport groups found it hard to resume back to operations. During the transition period, PUVs with valid permits are still supposed to be allowed to operate. The “Special Permit” measures undertaken by the LTFRB and DOTr has prevented or made them it hard for them to operate. Some of the organized

cooperatives have also raised these concerns during dialogues with the leadership of the LTFRB. Transport leaders have also iterated the slow processing and recognition of their newly formed cooperatives. To augment the livelihood of the transport workers during the lockdown period, Service Contracting Program was introduced. In this scheme, recognized cooperatives and driver/operators with valid permits can be hired by the government so they can operate again. This scheme is introduced in order to augment the livelihood of the drivers given the limited capacity imposed as a response to the pandemic. However, transport workers have also reported the slow processing of their pay out making their situation worse than ever before.

There is a need to elevate the conversation that providing them with standard salary but as well as considering the effects of climate emergency on their welfare. Policies and program design must take reconsider the situation of transport workers in climate measures since they are worst impacted by the consequences of climate change through air pollution, flooding, and congestion (Dave et al. 2021).

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5 Conclusion and Recommendation

5.1 Key Findings

Reform in the transport sector is matter of urgency since issues in the transport sector produces persistent and intractable societal problems such as congestion, carbon emissions and accidents (Sunio et al. 2019). The PUVMP subscribes to the ideals of sustainable mobility and just transition through the implementation of the following components in its design: 1) “modernize the current PUV fleet”, 2) “move towards low emission PUVs”, 3) “improve welfare of commuters and encourage modal shift”, and 4)improve standards of living of drivers, operators, and their families (Torre et al. 2019). However, its implementation is challenged primarily by the resistance from the transport workers, consolidation, and financing challenges. These can be addressed through augmentations in the policy making as well as enough funding from government appropriations. The reform program pushes for the modernization of almost all the vehicles plying the streets of Metro Manila. Based on the feedbacks from the interviewees and the reviews of the relevant documents for the project, there is a question if the government is putting enough resources to make this program a success.

In conclusion, the PUVMP is a viable option to have sustainable mobility. The modernization program embarked on a very ambitious goal to modernize the transportation fleet in 3 years. The main idea to is to make modernize the urban road transportation to make it more appealing to the public yet somehow at the onset of the program did not take into account into making the program appealing to the transport workers and sector. Many of the small operators and drivers felt that they were robbed off their livelihood because of the processes that they need

to go through toward modernization. While they support the implementation of the program, transport workers ask for the support of the government so that the franchises will not be left to the hands of the corporations. It is worth noting that the transport workers are more versed with the concept of just transition in the modernization program. Interestingly their concept of just transition focuses on the collective welfare of the transport workers being able to ride with the modernization program rather than focusing centrally on their welfare individually. To quote CEED, 'Just Transition' can only be achieved through just transformation. The call for just transition also includes other members of the transportation sector which includes mechanics, administration, ticketing, cleaners, and conductors.

To answer the question posed by the same title of this study, I believe that the PUVMP has the potential to solve the transportation crisis the country. However, some changes that must be made in order for this program to truly serve its purpose.

5.2 Recommendations to policymakers

Transport problem is one part of the problems that brought upon urbanization. As many studies have found out, it is hugely intertwined with the settlement issue and inequality of opportunities The transport problem in the country is intertwined with the housing/settlement sector as well as the access of to the opportunities and livelihood. If implemented properly, the program is a good foundation in order for the country to transition to low carbon road transportation. With the main points discussed above, this thesis poses the following recommendations in the implementation of the PUVMP:

Paradigm shift from moving cars to moving people

There is a need to recalibrate the key performance indicator of congestion in the country. Instead of the decrease of travel time and travel distance, measure should be on the decreased commute time of the public. Indicators such as decreased travel time and distance pressures and results on the construction of more and by-pass roads instead of improving the public transportation network and infrastructure.

Investment on road transport system

The Build! Build! Build! Program of the incumbent government prioritizes government infrastructures with much focus on building roads and improving the rail networks nationwide. While these are good in the long term and an ideal situation if it will come into fruition, there is still a huge gap on the travel supply, especially in the Mega Manila. Many workers still rely on road transport this especially that not everyone can avail of the convenience of the work from home set up. This can be addressed through appropriation in the national budget for the transport department. The urban road transport needs to be responsive to the travel demand. There is a need to ensure the interconnectivity among public transport modes of travel by putting up common stations that would integrate bus, jeepneys, and rail systems.

Establishment of seamless single transport document and single access point and one-stop shop

There is a need to simplify the administrative process and procedures in industry consolidation. Since there is also considered as a frontline service, streamlining the process especially in

recognizing transport cooperatives would make this program attractive to the industry. Single-access and one-stop shop would also facilitate easier and faster transactions as well as the possibility of reducing the regulatory requirements.

Incentives for industry transformation

Given the current condition of the transport workers especially with the economic effect of the covid19 pandemic, providing and raising the equity subsidy would make the program more attractive to the industry. Advocate groups and transport groups have initiated the call to raise the equity up to PhP 500,000 (USD 10,0000) or about 25% of the cost of the current modern jeepneys. This would be a win-win situation for the commuters, transport workers, and the government. With the recession looming due to the pandemic, government spending is needed in order to revitalize the economy. The government must also tap other commercial banks that could help in vehicle financing.

Integrated fare collection system

The integration of the fare system for the LRTA lines 1 and 2, MRT Line 3 and eventually MRT Line 7 has already been raised by the Move As One Coalition (2021). The modernized road transport vehicles and the organization of the transport operators as cooperatives provide a good platform in order to be included in the automatic fare collection system. The system would provide convenience to passengers especially getting to places requires several modal transfers.

Establish stronger transport cooperatives management

Among the crucial component of the program is the capability of the program to sustain the payment of the vehicles. This would depend on their capability to manage their organization and sustain their operation. There is a need to invest and develop fleet management capacities. Transport groups have called for more practical and experiential trainings in the fleet management capacities.

Review the alignment of service contracting program in the PUVMP

This reactive program would facilitate and ensure adequate and secure employment for the transport workers. The long-term contracts would not only be beneficial to the drivers but also to the transport groups as this can provide them stronger creditworthiness.

Investment on locally made environmentally and modern PUV units

The cost of the modern units can be reduced if there can be locally manufactured and assembled. The national government with private partnerships can develop new market opportunities in scaling and commercialization of the modern and environmentally compliant units. This market can extend to the modernization of environmentally friendly tricycle units. This would not only make the investment attracted to the operators but would also boost the economy and create more green jobs.

5.3 Broader implications, limitations, and recommendations for future research

The major contributions of this thesis have been to demonstrate that : (1) PUVMP has the potential to solve the urban road transportation crisis in Metro Manila, (2) the program has a great potential to ensure the delivery of the Philippines' unconditional NDC as committed to the Paris Agreement, (3) just transition in the transport sector is still yet to be felt, (4) flexibility in policy-making and deliberate appropriation and financing is needed in order to reform the urban road transport sector. Additionally, it offers recommendations that could help in the full implementation of the program. In general, this thesis contributes to the study of sustainable mobility and just transition in an emerging economy. As the program aims to reform the current transportation regime toward the development of low-carbon transport development in the developing world. The thesis focused on the implementation of the program in the capital region given its importance to the country. However, it would still be worth investigating the implementation of the program on national scale especially that transport planning is devolved to the cities outside the Mega Manila.

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Annex A. Guide Questions

Guide questions for implementing agency (DOTR)

1. Who are the target beneficiaries of the program?
2. Why is it important to start the modernization in the jeepney sector first?
3. How does the reform with drivers' salaries be implemented? How can it be sustainable?
4. What does the government intend to do with the disposed old PUVs?
5. How does the covid19 pandemic affect the implementation of the program?
6. What are the challenges/hindrances faced in the implementation of the program?
7. In what aspect should the implementation focus more?

Guide questions for implementing agency (LTFRB)

1. Who are the target beneficiaries of the program?
2. How many LGUs in Metro Manila have already complied/submitted their transportation plan?
3. What does the government intend to do with the disposed old jeepneys?
4. How does the Covid19 pandemic affect the implementation of the program?
5. What are the challenges/hindrances faced in the implementation of the program?
6. In what aspect should the implementation focus more?

Guide questions for transport group/s

1. How were you consulted in the design and implementation of the program?
2. How receptive are the local governments to the comments/suggestions/reactions of the transport groups in terms of the roll out of the PUVMP?

3. What are the challenges encountered in the implementation of the program?
4. How did the DOTr/LTFRB support the transport groups towards the transition of the program?
5. How can the DOTr/LTFRB improve the implementation of the program?

Guide questions for city/municipality transport officer

1. How did the DOTr and LTFRB supported the LGUs in the preparation of the LRTRP/ in the preparation of the MUCEP study?
2. What are the lessons learned and skills developed during the implementation of the program?
3. What are the impacts or effects of the program within the LGU?
4. What are the problems encountered by the implementing agency in the LGU setting?

Annex B. List of People Interviewed

Name	Affiliation
1. EnP Joemer Pontawe	Project Evaluation Officer IV, Office of the Assistant Secretary for Road Transport, and Infrastructure, DOTr
2. Ms. Joyce Rivera	Program Manager, PUVMP, DOTr
3. Ms. Jenny Malifecio	Program Manager, PUVMP, DOTr
4. Mr. Jaime Aguilar	Secretary-General, NCTU Central Office
5. Ms. Angelica Tiu Kanindot	Group Leader, NCTU-Visayas
6. Mr. Anthony Siy	Head of Transport Department, Pasig City

Annex C. Data Sources

Table 18. Summary of data sources relating to the implementation of the program.

Type	Title	Organization	Date
Department Order no. 2017-011	Omnibus Guidelines on the Planning and Identification of Public Road Transportation Services and Franchise Issuance" or better known as Omnibus Franchising Guidelines as OFG	DOTr	19 June 2017
Department Order no. 2018-016	Guidelines on the Availment of the Equity Subsidy under the Public Utility Vehicle Modernization Program	DOTr	31 July 2018
Department Order no. 2018-024	Establishment of Program Management Offices for the Implementation of the PUV Modernization Program	DOTr	17 October 2018
Joint Memorandum Circular 2017-001	Guidelines on the Preparation and Issuance of Local Ordinances, Orders, Rules and Regulations concerning the Local Public Transport Route Plan (LPTRP)	DILG and DOTr	19 June 2017
Memorandum Circular 2018-006	Guidelines for the Public Utility Modernization Program's Initial Implementation pursuant to DO No. 2017-011	LTFRB	13 March 2018
Memorandum Circular 2018-008	Consolidation of Franchise Holders in Compliance with DO No. 2017-011	LTFRB	16 March 2018
Memorandum Circular 2018-009	Implementing Rules on Selection of Transport Operators for LGU Prepared LPTRP's under DO 2017-11	LTFRB	1 June 2018
Memorandum Circular 2018-010	Implementing guidelines during the transition period pursuant to Department Order No. 2017-011`	LTFRB	22 June 2018
Memorandum Circular 2018-013	Implementing Guidelines in the Acceptance of Applications for New CPC	LTFRB	27 June 2018
Memorandum Circular 2019-013	Consolidated Guidelines on the Process of Issuance of CPC and Provisional Authority/Special Permit under the OF and PUVMP	LTFRB	16 March 2019
Memorandum Circular 2018-060	Guidelines for the Preparation of Public Transport Route Plan (LPTRP) by the Local Government Units (LGUs), basus for the Land Transportation Franchising Regulatory	DILG	3 May 2018

	Board (LTFRB) issuance of Franchises to Public Utility Vehicles		
Memorandum Circular 2018-039	Local Public Transport Route Planning (LPTRP)-DOTr Capacity Building Activities	DILG	22 March 2018
Joint Memorandum Circular No. 2020-04-A	DTI and DOLE Supplemental Guidelines on Workplace Prevention and Control of Covid-19	DTI, DOLE	15 August 2020
Joint Administrative Order No.2020-0001	Guidelines on the Proper Use and Promotion of Active Transport During and After the COVID-19 Pandemic	DOH, DOTr, DILG, and DPWH	19 August 2020
Department Order No. 2020-021	Guidelines for Scrapping the Old Public Utility Vehicle (PUVs) under Department Order No. 2017-011	DOTr	11 November 2021
Joint Memorandum Circular No. 2021-001	Implementing Guidelines to Govern the Accreditation of Scrappage Facilities and Manner of Scrapping of Public Utility Vehicles	DOTr, LTO, LTFRB	23 February 2021
Memorandum Circular 2021-021	Guidelines for the Issuance of Provisional Authority to Units of Individual Operators with Pending Application for Consolidation Pursuant to the Omnibus Franchising Guidelines (OFG) and the Procedure in the Qualification and Selection of Applicants	LTFRB	15 April 2021
Manual	Local Public Transport Route Plan Manual Volume 1	DILG, DOTr, and LTFRB	October 2017

Source (Sunio et.al. 2019)