

# Operations of Mini-Buses (Makibamag, Dasutransco, and Dipatransco) In the Province Of Davao Del Sur: An Assessment

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## Abstract

The Public Utility Vehicle Modernization Program (PUVMP) was started by President Rodrigo Duterte to replace outdated public transportation with more modern, low- or zero-emission vehicles like e-jeepneys. Due to the lack of coordination and consolidation among jeepney operators, a significant number of individual operators are currently competing for road space and overlapping routes. This condition worsens the Colorum epidemic in the country and affects PUV operations. This review paper was conducted to investigate the operations of the mini-bus, its sustainability, the contributions to the PPP, and its impact on the economy in the province of Davao del Sur. Air pollution, traffic congestion, scarce road capacity, and inefficient PUV operations are just some of the transport-related problems that the PUV modernization program can potentially solve, hence, this article premised a well-informed conclusion and recommendation for the existing phenomena under review. A systematic review of related literature and content analysis was conducted to encapsulate the recurring themes resulting in the operations of the mini-bus. Results showed that the legal framework, regulatory reforms, public-private partnership towards sustainability of mini-buses, and impact on the economy are among the mini-bus operations.

*Keywords:* Legal Framework; Public-Private Partnership towards Sustainability; Impact on the Economy, Operations of Mini-bus

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## 1. Introduction

The Public Utility Vehicle Modernization Program (PUVMP) was started by President Rodrigo Duterte to replace outdated public transportation with more modern, low- or zero-emission vehicles like e-jeepneys. This project was a component of a bigger effort to address environmental problems and improve public transportation's efficiency and safety. The Electric Vehicle Industry Development Act (EVIDA) Law, which emphasizes long-term industrialization, environmental preservation, and energy security, has been added to this program as of April 2022. In essence, the EVIDA Law established a thorough plan and a legislative framework for the advancement and use of electric vehicles in the Philippines (Abduljabbar, Liyanage, & Dia, 2022). Local public transit in Davao del Sur has always been sponsored, even before the

PUVMP. The PUVMP's general management and implementation are the DOTr's responsibility. The modernization program encourages operators to unite into legally recognized entities like corporations or cooperatives. With this approach, the old "border system" is replaced with a new job structure that offers drivers standardized perks and wages. Benefits like the minimum salary, social security, health insurance, and night differentials and leaves would be required for drivers. However,

several drivers accustomed to the boundaries system have expressed concerns about their livelihoods being negatively impacted by the decreased take-home pay (Fernandez, 2023). There are multiple procedures for the minibuses. This involves many public policy issues, including air pollution, the use of environmental resources, social justice, land use, urbanization, economic development, safety, and security. An understanding of minibus operations improves scheduling, routing, and resource optimization.

Guno et al. (2021) offered a thorough analysis of the Philippines' EV market, taking into account the effects of laws such as the PUVMP. The analysis emphasized the nation's technological and economic hurdles, including high infrastructure expenses for charging, problems with driving range, and costly investment and operating costs. Nevertheless, it also revealed a sizable amount of popular support, supported by legislation and lawful drivers. The study recommended that government spending on infrastructure and sustainable energy efforts for public education could be important facilitators of the adoption of EVs.

The policy of "one franchise, one operator, one entity" by the government should be reassessed. According to Mettke et al. (2016), the absence of coordination and consolidation among jeepney operators has led to a large number of individual operators vying for road space and serving overlapping routes. This disease impacts PUV operations and exacerbates the country's Colorum problem. The PUV modernization program can potentially solve various transportation issues like air pollution, traffic jams, limited road space, and ineffective PUV services. Nevertheless, a significant number of workers in the transportation industry, particularly drivers and operators, oppose the program's introduction.

In 2020, prior research utilized various methods to determine and evaluate the barriers and incentives related to the uptake of electric cars. Andelacio et al. employed a combination of methods in a single research study. Exploring the challenges and outcomes of upgrading jeepneys in the Philippines, as seen by three key groups in the sector: operators/drivers, passengers, and manufacturers. Meanwhile, Ruben and colleagues carried out a second research project to investigate the challenges encountered by electric vehicles and their impact on the future market by surveying 227 experts in the transportation and power sectors across Europe. Furthermore, it was found that the extensive adoption of EVs would change the traditional automotive industry's supply chain, impacting dealership and maintenance revenue, flows, and systems for refuelling and charging. Berkeley et al. utilized a multi-level approach in the meantime to investigate the factors that drive or impede socio-technical changes in the functioning of the contemporary mini-bus sector.

The PUVMP is the basis for many DOTr/LTFRB laws and regulations. The program aims to offer the industry a thorough and inclusive strategy and to back reliable, efficient, and safe public transportation. The PUVMP is revolutionizing the public transportation industry and is not just a simple car renovation project. The program aims to achieve specific objectives such as upgrading the current PUV fleet, restructuring the industry, transitioning to low-emission PUVs, improving commuter well-being promoting modal shift, and raising the quality of life for operators, drivers, and their families. The ten crucial components include 1) regulatory change; 2) route planning improvement; 3) public transportation route planning led by LGUs; 4) sector integration; 5) updating of fleets; 6) financial support; 7) vehicle maintenance program; 8) initial implementation; 9) backing from involved parties, and 10) communication. The beginning of the PUVMP's initial

implementation was in January 2018 (PUVMP-PMO 2020). Tacloban City is leading the nation in implementing the PUVMP, being the first city to do so.

## 2. Literature Review

Transportation is super essential for humans to run and carry out our activities effectively. In numerous developing nations, a lack of transportation infrastructure frequently hinders economic growth. A well-functioning transportation system is crucial in promoting economic progress and advancement. Deteriorated roadways, ineffective vehicle fleets, insufficient rail systems, and crowded aircraft. Congested ports are a typical aspect of transportation systems in developing countries. Issues like inexperienced transport managers and planners, as well as financial reorganization, can create physical challenges. Inefficient traffic rules are present due to the existence of red tape and bureaucracies. In general, transportation is the same. The real, tangible transfer of individuals and products from one location to another. The authors used a systematic review and content analysis of relevant literature. A systematic review of the literature involves finding, choosing, and evaluating research to address a specific question (Dewey, A. & Drahota, and A. 2016). The systematic review must adhere to a well-defined protocol or plan in which the criteria are explicitly outlined before conducting the review. It is an in-depth, clear investigation carried out across various databases and grey literature that can be duplicated and redone by other researchers. It requires creating a carefully planned search strategy that targets a specific area or addresses a specific question. The review examines the kind of information that is looked for, evaluated, and presented within established time frames. All the search terms, search strategies (such as database names, platforms, dates of search), and restrictions must be incorporated into the review. Moreover, qualitative content analysis involves condensing raw data into categories or themes through a process that is designed for valid inference and interpretation. This method involves employing inductive logic, where patterns and groupings are identified by closely analyzing the data and consistently comparing them (Selvi, 2019).

This review is imperative as it was able to collate and analyze data pinpointing the operations of the mini-bus in Davao del Sur. This also forms part of the existing research which is causative to the useful information in the operations of mini-bus, its sustainability, contribution to the public-private partnership, and its impact on the economy.

The authors developed a four-step plan to simplify the examination of literature related to mini-bus operations or modernization programs for public utility vehicles, which had already been extensively studied. The initial stage involved referring to current vehicles or public utility books online, followed by reviewing research articles from the past ten (10) years. Furthermore, utilizing the websites of entities involved in mini-bus operations and consulting policies, programs, resolutions, ordinances, bills, and laws related to the public utility vehicle modernization program.

## 3. The Study Area

Digos, known as the City of Digos, is a 2nd class component city and serves as the capital of Davao del Sur province in the Philippines. As per the 2020 census data, there are 188,376 individuals

residing in the area. The LTFRB has led the launching of seven modern PUV units in Davao del Sur province and its component city of Digos. The PUVMP aims to revolutionize the transportation system in the country as it will replace traditional transportation with brand-new vehicles equipped with features that provide comfort and security for passengers. Here are the routes and units included in this study with the details of mini- buses:

Transport Cooperative Name	Region	Province/ Sector	City	Address	Chairperson
Digos Padada Transport Cooperative (DIPATRANSCO)	Region XI	Davao del Sur	Digos City	San Jose Highway, San Jose (Balutakay), City of Digos (Capital), Davao del Sur, Region XI (Davao Region)	Ronald Sabandal
Davao Sur Transport Cooperative	Region XI	Davao del Sur	Digos City	Public Market, Zone 2, City of Digos, Davao del Sur	Roldan Caniban
Makibamag Transport Cooperative (MAKIBAMAG)	Region XI	Davao del Sur	Digos City	Blk.6 Lot 4 Central Plain Phase 3 Subd., Zone 2 (Pob.), City of Digos (Capital), Davao del Sur, Region XI (Davao Region).	Ruel S. Ang

Zone 3 Digos City to Tacul Magsaysay via Hagonoy and Matanao and vice versa was awarded to Dipatransco and Dasutransco with 10 units each; Zone 3 Digos City to Upper Bala, Magsaysay Route and vice versa was awarded to Dasutransco with 10 units. These routes, which started with 10 units each, are from Zone 3 Digos City to Poblacion Malalag and vice versa. Thirteen units of Dipatransco are provided from Aplaya, Digos City Loop Service via Barangay Tres de Mayo and Barangay San Miguel; ten units are provided from Barangay Colorado Central Terminal (New Business Center) to Dasutransco via National Highway.



Figure 1: Routes of MAKIBAMAG transportation in Digos City

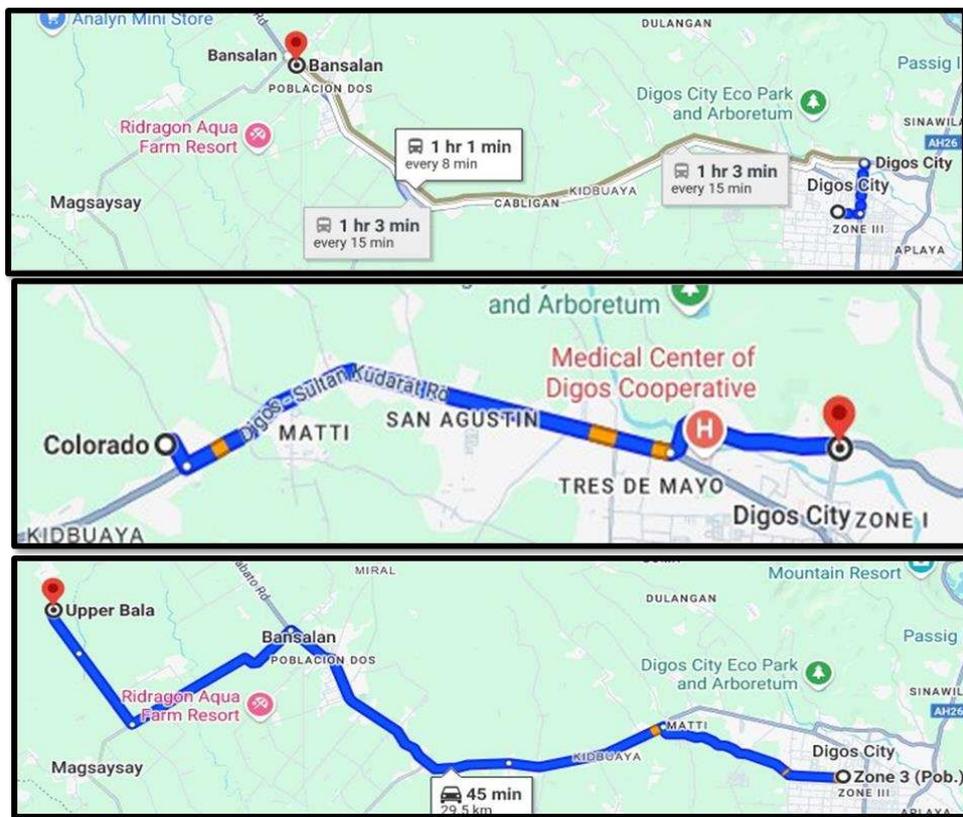


Figure 2: Routes of DASUTRANSCO transportation in Digos City



Figure 3: Routes of DIPATRANSCO transportation in Digos City

#### 4. Methodology

Based on the review conducted, the authors conceptualized the following categories in the assessment of mini-bus operations in Davao del Sur.

##### *Legal Framework*

The Public Utility Vehicle Modernization Program (PUVMP), initiated by the Department of Transportation (DOTr) in 2017, aims to enhance public transportation. The country's ongoing increase in the number of motor vehicles has led to many issues, such as air pollution, traffic jams, and a lack of adequate route space, especially in urban areas. This is how to address these widespread problems. The production of motor vehicles is speeding up due to the rapid growth of public utility jeepneys (PUJs), the bulk of which are fifteen years of age or older. Very old drivers can still operate automobiles because PUJs do not have an age requirement. These PUJs' poor roadworthiness puts commuters' safety from auto accidents at risk as well. People are less inclined to use public transportation if more PUJs are seen as dangerous and unreliable. As a result, more individuals become automobile owners and depend on them, which exacerbates traffic congestion.

Department Order 2017-0116, also known as the Omnibus Franchising Guidelines (OFG), which was released by the DOTr on July 19, 2017, assists in the program's execution. This is by Section 17 of Republic Act (RA) 7160, which includes the Philippine Local Government Code (LGC), "Executive Order 125-A and Administrative Order 202, s. 1987, accordance with national government policy, permit and encourage enough, safe, reliable, efficient, and environment-friendly Public Utility Vehicles (PUVs); WHEREFORE, public road transport services nationally should be provided in a timely, sufficient, cost-effective, and dependable way; WHEREAS, the Department recognizes the need to depart from the long-standing exclusive reliance on private sector initiative in serving local road transport requirements that are

processed by the Land Transportation Franchising and Regulatory Board (LTFRB) without the benefit of local public transport plans based on local mobility requirements; WHEREAS, it is the Department's policy that a local-level public transport planning approach, in line with the decentralization envisioned by Republic Act (R.A.) 7160 or The Local Government Code of the Philippines (LGC), will, in the longer term, be more effective in determining local public transport services; WHEREAS, Section 17 of the LGC further provides that LGUs, particularly in cities, shall endeavor to provide adequate, effective, and efficient transportation facilities that would provide access and mobility for its people to pursue socio-economic activities, as reflected in its Comprehensive Land Use Plan (CLUP); WHEREAS, the Department recognizes the subsidiarity principle that LGUs are in a better position to identify local public transport service requirements and formulate plans for improving connectivity between and among their urban and rural socio-economic activities, in the province and the region that they are a part of; (Sunio, Gaspay, Guillen, Mariano, & Mora, 2019).

The plan outlines vehicle classification, loan terms and structure, and operator consolidation. Despite challenges, consolidation has become a top priority for the DOTr and LTFRB, as it increases operators' capacity and modernization acceptance, making it a key driver of progress (Department of Transportation and Department of the Interior and Local Government, 2017).

The Fair and Reasonable Public Utility Jeepney Modernization Act, Legislator Michael Edgar Y. Aglipay (DIWA Party List) drafted House Bill (HB) No. 4823, which supports the PUVMP by assisting with the formulation of legislation that mandates PUVs to be suitable, dependable, efficient, and ecologically sustainable. The proposed HB seeks to safeguard the safety and comfort of drivers in addition to advancing the rights and interests of industry participants, especially PUJ drivers and operators who stand to gain the most from the modernization. In this sense, HB No. 6136, which was approved on March 10, 2020, for the third reading, would designate as a fund for the PUVMP implementation of 45% of the increased proceeds from the modified vehicle user tax. Another law introduced by Senator Grace Poe was Senate Law 867, The Just and Humane Public Utility Vehicles Modernization Act. The law offers to subsidize drivers and/or operators by 10% of the total cost of a refurbished automobile.

### *Regulatory Reforms*

DO 2017-11, which was also released by the LTFRB, several memorandum circulars were issued on various topics, including workshops, the appointment of traffic safety officers' plans for public transportation routes between regions and provinces, off-road terminal operations, franchisee consolidation, and applications for the appropriation of abandoned or expired public meeting certificates.

### *Operations of Mini-bus*

The LTFRB was tasked with putting the Omnibus Franchising Guidelines (OFG) into practice, which prompted and mandated operator consolidation and the creation of bigger, better-organized PUV fleets. The same study by Napalang and Pontawe (2018) claims that the current structure of the PUJ industry—one franchise, one operator, and one unit—is the source of operational inefficiencies, which lead to street rivalries and a disjointed scheduling system.

The transportation sector is at the core of numerous persistent and unresolvable societal problems, including traffic, carbon emissions, and accidents (Moradi & Vagnoni, 2018). The responsibility for creating all rules and guidelines and implementing all transportation-related projects falls on the Department of Transportation (DOTr). Similarly, public utility vehicle franchises are managed and set in price by the Land Transportation Franchising and Regulation Board (LTFRB).

The in charge of issuing driver licenses and registering all motorized land vehicles is responsible for the Land Transportation Office (LTO), a Department of Transportation entity. The in charge of encouraging small businesses to join transportation cooperatives is care for by the Office of Transportation Cooperatives (OTC), a separate entity within DoTr. As a consequence of the new strategy, the Department of Interior and Local Government (DILG), which administers local government units (LGUs), and DOTr established an agreement on the development of local public transit (Mateo-Babiano, Recio, Ashmore, Guillen, & Gaspay, 2020). Local government units (LGUs) used to only have the authority to license tricycle operators, manage traffic on municipal road and restrict the usage of these vehicles inside their borders. The new DOTr policy mandates that local government units and provincial governments submit plans for local public transportation routes. These plans will be the basis for the LTFRB's franchise issuing. In summary, local government units (LGUs) have assumed control over public transportation planning because they are more qualified than the federal government (DOTr) to understand local circumstances and requirements. It has been suggested that creating a trustworthy relationship between operators and local authorities will increase the likelihood of successful system development and service delivery. This has been accomplished in two main ways: by creating contract development ideas and system development ideas (Tiglaio, Ng, Tacderas, & Tolentino, 2023).

The DOTr and DILG Joint Memorandum Circular 2017-001 provides local government units with recommendations for creating their LTPRPs. Local governments in the Philippines may now organize their public transportation networks owing to a major public transportation reform known as the Local Public Transport Route Organization, or LPTRP. It is a planning document that informs critical tactical, strategic, and operational choices. As such, modernization's advocated improvements have both direct and indirect costs. Additionally, despite a wealth of research on the PUVMP's advantages and disadvantages, few studies to date have adequately examined the program's local effects and the initial adopters' actual experiences. Everyone agrees that the LPTRP is now the obstacle preventing PUVMP implementation from moving further. Not all cities have filed the plans required for the financial programs of government financial institutions (GFI) which would act as the basis for franchise openings by the LTFRB (Tacderas, M. Y., Ngb, A. C. L., Tolentino, N. J. Y., Tiglaio, N. C., & Herrera, C. E., 2021).

Furthermore, it has been discovered that PUJs, especially in Metro Manila, considerably increase air pollution. This is mostly explained by the fact that, despite their extensive use of public transit, only PUJs in the nation are exempt from age limits Napalang and Pontawe (2018). While PUJs make up a very small portion of all vehicles in Metro Manila, Mettke (2016) also noted that, according to reports from the Blacksmith Institute, the jeepney industry contributes significantly to the greenhouse gas emissions of the road sector, accounting for 7% of all emissions. Clean air pollution caused by plug-in hybrid vehicles (PUJs) is also caused by inadequate maintenance procedures, poor vehicle design, and poor production methods, and other issues Air Asia (2016). The year an automobile was registered at the LTO, not the age of its major components, is actually how Napalang

and Pontawe (2018) determined the age of an automobile in the nation. For example, engine, frame, etc.). As a result, a car's engine may be significantly older, but it might still be legally regarded as 15 years old in the nation.

#### *Public-Private Partnership towards Sustainability of Mini-buses*

A PPP, in its widest sense, is a legally binding agreement between a private company and a public transportation agency. It expands a public entity's engagement in the planning and execution of an infrastructure project, facility, or service. Such an entity often handles one or more parts of fundraising, financing, planning, constructing, building, operating, and maintaining a transportation facility in the maritime zone.

Using financial resources to produce and provide public goods and services is the fundamental economic role of government. However, due to a lack of funding, it has become more challenging to provide the public with the number and quality of services they require given their growing demand. Adopting the PPP model is crucial for public project investment, finance, building, operation, and management. This is another efficient technique to address the issue of public goods delivery with the restricted resources of the government. In addition to increasing capital mobility, project selection, and efficiency—including lowering resource loss, raising labor productivity, and cutting public management costs—sustainable PPP can also boost job creation and economic growth on the project site (Tariq & Zhang, 2020).

A rent contract agreement involves a city municipality frame (CMF) collecting money from a private operator, who owns and operates bus transport equipment. The CMF collects ticket sales money, while the private operator runs the buses. The CMF employs a conductor and a professional team of employees and drivers. The private operator is compensated based on the cost per kilometer (Mohammed & Lateef, 2020).

#### *Impact of Mini-Buses on the Economy*

The economy is significantly impacted by public transportation. Mobility is provided, land use and development patterns are shaped, employment is created, and governmental policies governing energy use, air quality, and carbon emissions are promoted. By giving firms access to a wider pool of prospective workers at reduced transit costs, public transportation investment can increase the efficiency of an economy. This phenomenon is known as agglomeration economics. In regions where there is a large concentration of office space, this can therefore result in higher office rentals. Additionally, by promoting manufacturing, construction, and public transportation operation activities, investments in public transportation generate cash and jobs right away. All things considered, public transportation is essential for fostering efficiency, sustainability, and economic progress.

Public transportation emerged in the mid-1800s due to production factors and technological advancements. Its impact on economic development was significant, and it modernized the transportation industry's technical and material sectors. As the division of labor grew, transportation became more individualized and supported the industry. Today, the transportation sector faces

challenges like traffic congestion, environmental impact, and creating coordinated services at the lowest possible cost (Dumitru, 2017).

Transportation investments should prioritize increasing economic productivity, which drives economic growth. This includes lowering expenses while increasing safety, energy independence, and environmental sustainability. High-productivity investments decrease traffic and improve connectivity while creating jobs in the short term. Despite short-term employment creation, it is critical to analyze the larger economic picture. (White, 2016).

According to the Bay Area Transportation Authority (2024), for good reason, public transportation is now essential to modern metropolitan living. One of the main reasons public transportation is still so important to many residents is the economic advantages it may offer to both individuals and their communities. Public transportation is a reasonably priced substitute for buying and caring for a personal car. Using public transportation can help commuters save money on parking, gas, insurance, and auto maintenance. Furthermore, the operation of public transportation creates job opportunities for maintenance personnel, office workers, bus drivers, and other specialists. Furthermore, it connects users to adjacent job opportunities. Residents may easily get to work using public transit. Residents may easily access nearby businesses in their communities by riding public transit. The town's businesses, leisure centers, and other institutions are easily accessible to its residents, which promotes economic growth. Aside from ferrying customers to companies, public transportation may increase a neighborhood's appeal to investors and enable the establishment of new businesses. Public transportation minimizes carbon emissions, which benefits the environment by reducing the number of private autos on the road. Promoting cleaner air reduces pollution's costs to the environment and human health. (Kaepelin, 2023).

Effective public transportation planning requires an understanding of minibus operations by city planners and transportation authorities. Operators who are familiar with operations can make the most out of their minibuses. Effective planning and scheduling guarantee that every vehicle is utilized to its maximum potential, reducing downtime and optimizing revenue. For transportation services to be safe, compliant, efficient, and customer-satisfied, it is essential to understand how minibuses operate. Encouraging overall community well-being, it assists operators and stakeholders in providing dependable and efficient public and private transportation (Liao & Correia, 2022).

As part of the Public Utility Vehicle (PUV) improvement project in the Davao Region, the Land Transportation Franchising and Regulatory Board (LTFRB)-Davao has designated ten routes in Digos City and Davao del Sur. Currently operating minibuses in the province of Davao del Sur are the Digos-Padada Transport Cooperative (DIPATRANSCO), Davao-Sur Transport Cooperative (DASUTRANSCO), and Makibamag Transport Cooperative (MAKIBAMAG) (Romero, Guillen, Cordova, & Gatarin, 2014).

Due to the growing number of minibuses, the provincial government, cooperatives, and LTFRB are looking for measures to improve their sustainability, usefulness, and influence on the local economy. This research was investigated the modernization experiences of MAKIBAMAG, DIPATRANSCO, and DASUTRANSCO operators, as well as the economic and sustainability consequences of these firms in the province of Davao del Sur.

Shown below is the route plan for the public utility vehicle modernization program is provided in Memorandum Circular Number 2022-019 for issuing a new Certificate of Public Convenience (CPC) in Davao del Sur. The plan includes the approved routes for the Local Public Transport Route Plan (LPTRP) and data on mini-buses in the province.

<b>ROUTE (Detailed Route Structure)</b>	<b>AUTHORIZED MODE</b>	<b>NO. OF AUTHORIZE D UNITS</b>	<b>ROUTE LENGTH (KM)</b>
<b>RATIONALIZED ROUTES</b>			
<b>1</b> <b>ZONE III, DIGOS CITY – POBLACION, MALALAG</b>  Digos Central Market Terminal, Zone III, Digos City to Padada Terminal, Almendras District, Padada along Digos Diversion National Road, Davao Cotabato National Road, and Digos Makar National Road. Padada Terminal to Sulop Terminal, Poblacion Sulop along Digos Makar National Road. Sulop Terminal to Ochenta Terminal along Digos Makar National Road. Ochenta Terminal to Malalag Public Terminal, Poblacion, Malalag along Davao Sarangani Coastal National Road	PUJ Class 2	49	26.35
<b>2</b> <b>ZONE III, DIGOS CITY – TACUL, MAGSAYSAY via Hagonoy and Matanao</b>  Digos Central Market Terminal, Zone III, Digos City to Hagonoy Dropoff Point, Poblacion, Hagonoy along Digos Makar National Road, and Leling-Sinayawan-Poblacion Hagonoy Provincial Road. Hagonoy Dropoff Point to Matanao Dropoff Point, Poblacion, Matanao along Poblacion Hagonoy-Maliit Digos-New Visayas Provincial Road, and Sinawilan-Matanao Provincial Road. Matanao Dropoff Point to Magsaysay Dropoff Point along Matanao-Calamagoy-Magsaysay Provincial Road. Magsaysay Dropoff Point, Poblacion, Magsaysay to Tacul Dropoff Point, Tacul, Magsaysay along Magsaysay Tacul Provincial Road	UVE Class 3	92	48.29

3	<b>ZONE III, DIGOS CITY – INAWAYAN, STA. CRUZ</b>  Digos Central Market Terminal, Zone III, Digos City to Sta. Cruz Integrated Terminal, Zone III, Sta. Cruz along Digos Makar National Road, Davao Cotabato National Road and Davao Cotabato Bypass National Road. Sta. Cruz Integrated Terminal to Inawayan, Sta. Cruz along Davao Cotabato Bypass National Road and Davao Cotabato National Road	PUJ Class 3	66	32.73
4	<b>ZONE III, DIGOS CITY – UPPER BALA, MAGSAYSAY</b>  Old Terminal, Zone III, Digos City to Bansalan Dropoff Point, Bansalan along Digos Makar National Road, Digos Junction National Road, and Davao Cotabato National Road. Bansalan Dropoff Point, Bansalan to Upper Bala Dropoff Point, Upper Bala, Magsaysay along Davao Cotabato National Road, Bansalan-Magsaysay Provincial Road, Barayong - Mabini - Bala - Upper Bala FMR Municipal Road	PUJ Class 3	67	36.59
5	<b>ALMENDRAS DISTRICT, PADADA – POBLACION, KIBLAWAN</b>  Padada Public Terminal, Almendras District, Padada to Kiblawan Dropoff Point, Poblacion, Kiblawan along Limonzo-Tanwalang Kiblawan Provincial Road	PUJ Class 2	22	13.10
<b>NEW ROUTES</b>				
6	<b>APLAYA, DIGOS CITY – POBLACION, BANSALAN via Kapatagan</b>  Bus Terminal, Aplaya, Digos City to Kapatagan Terminal, Kapatagan, Digos City along Digos Diversion Road, Davao Cotabato National Road, and Cogon-Kiagot-Kapatagan Provincial Road. Kapatagan Terminal, Kapatagan, Digos City to Bansalan Dropoff Point, Poblacion, Bansalan along Cogon-Kiagot-Kapatagan Provincial Road, and Bansalan-Mt. Apo National Park National Road	UVE Class 3	15	63.04
<b>TOTAL NO. OF ROUTES / NO. OF UNITS</b>		<b>6</b>	<b>311</b>	

Figure 4: MINI-BUS ROUTES

#	Transport Cooperative Name	Area	Region	Province/ Sector	City	Address	Chairperson
1.	Bansalan Digos Van Transport Cooperative (BANDIVA TRANSCO)	Mindanao	Region XI	Davao Del Sur	NA	Purok Panaghiusa R. Delos Cientos, Poblacion, Bansalan, Davao Del Sur, Region XI (Davao Region)	Elypher John Capacio
2.	Binugao Transport Service and Multi-Purpose Cooperative	Mindanao	Region XI	Davao del Sur	NA	Binugao, Toril, Davao City	Mario D. Saniel
3.	Buhangin Transport Service Cooperative	Mindanao	Region XI	Davao del Sur	NA	87-1 033 Rosal St., Zone I, Mahayag, Buhangin, Davao City, 8000 Davao Del Sur	Jose O. Macasa
4.	Calinan Transport Service Cooperative (CALTRANSCO)	Mindanao	Region XI	Davao del Sur	NA	Ramon Magsaysay St., Calinan, Davao City, 8000 Davao Del Sur	Virginia Poblete
5.	Calinan-Buda Transport Service Cooperative	Mindanao	Region XI	Davao del Sur	NA	Gaisano Grand Cmpd., National Highway, Calian, Davao City	Ederio Naquila
6.	Catagrande Transport Service Cooperative	Mindanao	Region XI	Davao del Sur	NA	Sitio Escuela, Catalunan Grande, Talomo District, Davao City, 8000 Davao Del Sur	Wilfred Anoz
7.	Ciudad de Esperanza Transport Service Cooperative (CDETRANSCO)	Mindanao	Region XI	Davao del Sur	NA	Totesora Res. Lot 16 And 17, Faith St., Pag-Ibig Homes, Brgy. Cabantian, Buhangin, Davao City, 8000 Davao Del Sur	Percibal M. Padios
8.	Davao Avante Transport Service Cooperative (AVANTE TRANS)	Mindanao	Region XI	Davao del Sur	NA	Terminal Compound, Abreeza Ayala Mall, Bajada, Poblacion, Davao City	Rannie A. Nadela
9.	Davao Carplanners Transport Service Cooperative (D-CARPLANS-TS)	Mindanao	Region XI	Davao del Sur	NA	Marco Compound, Evergreen St., Purok 30, Barangay Ma-A, Talomo, Davao City	Federico V. Ortaliz
10.	Davao Deca Tacunan Transport Cooperative (DADETRANSCO)	Mindanao	Region XI	Davao del Sur	NA	Purok 20, Phase 2 Block 54 Lot 33, Deca Homes, Tugbok District 2, Davao City	Arnold B. Ferenal
11.	Davao International Transport Cooperative (DITC)	Mindanao	Region XI	Davao del Sur	NA	Door 10, Adframe Bldg. Davao International Airport Compound, Sasa, Buhangin District, Davao City 8000 Davao Del Sur	Joey Marie G. Gabisan
12.	Davao Sur Transport Cooperative	Mindanao	Region XI	Davao del Sur	NA	Public Market, Zone 2, city of Digos, Davao Del Sur	Roldan Caniban
13.	Davao Taxi/PU Filcab Operators Transport Service Cooperative	Mindanao	Region XI	Davao del Sur	NA	Block 12, Lot 10, P 6 Mango Street, Mintal Relocation, Tugbok District, Davao City	Ricardo A. Aranda
14.	Davao Tourist Transport Service Cooperative	Mindanao	Region XI	Davao del Sur	NA	Star Oil Gas Station, La Verna Hills, C.P. Garcia Highway, Buhangin, Davao City	Mr. Emelito R. Villas
15.	Delta Tours Transport Service Cooperative	Mindanao	Region XI	Davao del Sur	NA	F.R. Leonor Bldg. Quirino Ave. - San Pedro Ext. Davao City.	Maylen E. Pacheco
16.	Diamond Ace Tours Transport Service Cooperative	Mindanao	Region XI	Davao del Sur	NA	Door 2 ALEVR Bldg., Velasco Compound, Balusong St., Brgy.	Rosie I. Tan

						Matina Crossing, Davao City	
17.	Digos Padada Transport Cooperative (DIPATRANSCO)	Mindanao	Region XI	Davao del Sur	NA	San Jose Highway, San Jose (Balutakay), City of Digos (Capital), Davao Del Sur, Region XI (Davao Region)	Ronald Sabandal
18.	Durian City Transport Service Cooperative	Mindanao	Region XI	Davao del Sur	NA	Shanghai, Matina Aplaya, Talomo, Davao City	Victor Parantar
19.	ERODA Transport Service Cooperative	Mindanao	Region XI	Davao del Sur	NA	Block 32 Lot 34 Phase-I Elenita Heights Subdivision, Catalunan Grande, Davao City	Prisco C. Gambong
20.	Forestral Multi-Purpose Cooperative	Mindanao	Region XI	Davao del Sur	NA	Crossing Forestral, Km 11, Cabantian, Buhangin, Davao City, 8000 Davao Del Sur	Dolores Gonzaga
21.	Galaxy Transport Service Cooperative	Mindanao	Region XI	Davao del Sur	NA	Gaisano Mall Of Toril Compound, Lizada, Toril, Davao City	Nelly B. Campos
22.	Iranum Transport Service Cooperative	Mindanao	Region XI	Davao del Sur	NA	Block 12, Don Isidro St., Brgy. 5, Don Isidro Village, Davao City, 8000 Davao Del Sur	Hadji Esmael Sacandal
23.	Kapatagan Transport Cooperative	Mindanao	Region XI	Davao del Sur	NA	Brgy. Kapatagan Mt. Apo Purok 1, Kapatagan (Rizal), City of Digos (Capital), Davao Del Sur, Region XI (Davao Region)	Jerry Delos Reyes
24.	MAKIBAMAG Transport Cooperative (MAKIBAMAG)	Mindanao	Region XI	Davao del Sur	NA	Blk. 6 Lot 4 Central Plain Phase 3 Subd., Zone 2 (Pob.), City Of Digos (Capital), Davao Del Sur, Region XI (Davao Region)	Ruel S. Ang
25.	Mamay Transport Service Cooperative (MYTRANSCO)	Mindanao	Region XI	Davao del Sur	NA	Mamay Road, Brgy. Angliongto, Buhangin, Davao City	Michael M. Ibanez
26.	Matina Aplaya Transport Service Cooperative (MANTRANSCO)	Mindanao	Region XI	Davao del Sur	NA	Fronting Petro, Del Carmen Road. Matina Aplaya, Talomo, Davao City	Leonilo R. Hilay
27.	Metro Davao Transport Cooperative (MEDTRANSCO)	Mindanao	Region XI	Davao del Sur	NA	B-4 L-19 Maharlika Village, Matina Aplaya, Davao City, 8000 Davao Del Sur	Igmedio J. Tubal
28.	Mindanao United Transport Service Cooperative	Mindanao	Region XI	Davao del Sur	NA	391 Topaz St., Gem Village, Ma-A, Davao City	Delfin N. Adorado
29.	Panacan SM Transport Service Cooperative (PASMTRANSCO)	Mindanao	Region XI	Davao del Sur	NA	Joys Lechon Haus And Eatery, Landmark 1km 12, Buhangin, Davao City, 8000 Davao Del Sur	Nickel E. Angela
30.	People's Development for Progress (PDS) Transport Service Cooperative	Mindanao	Region XI	Davao del Sur	NA	Molave St., Ph 3, Brgy. Sto. Nino, Tugbok, Davao City	Jeremias C. Lequin
31.	South East Mindanao Transport Multi-Purpose Cooperative (SEMTRAMPSCO)	Mindanao	Region XI	Davao del Sur	NA	Purok Talakitok, Brgy. Dawis, Digos City, 8002 Davao Del Sur	Feliciano C. Villecencio
32.	Third District Transport Cooperative (TDTC)	Mindanao	Region XI	Davao del Sur	NA	Quimbao Compound, R. Magsaysay St. Calinan, Davao City	Eduardo Bulala
33.	Tibungco Transport Service Cooperative (TITRANSCO)	Mindanao	Region XI	Davao del Sur	NA	Purok 5, Punong 1, Bunawan, Davao City	Mario O. Reyes
34.	Toril Transport Service Cooperative	Mindanao	Region XI	Davao del Sur	NA	Purok 9A De Guzman Str., Davao City	Mr. Alexis E. Duque li
35.	United Calinan Operators Transport Service Cooperative	Mindanao	Region XI	Davao del Sur	NA	Ramon Magsaysay St. Corner Villafuerte St. Calinan, Davao City	Cirilo A. Duyac
36.	United Homeowners Transport Service Cooperative	Mindanao	Region XI	Davao del Sur	NA	Dona Pilar Village, Sasa, Davao City, 8000 Davao Del Sur	Raul V. Gatchalian
37.	Village Operators and Drivers Transport Service Cooperative (VODTRANSCO)	Mindanao	Region XI	Davao del Sur	NA	237-A Mandug, Davao City, 8000 Davao Del Sur	Martiniano Q. Salas

Figure 5: MINI-BUS LEGALLY OPERATED IN DAVAO DEL SUR

## 5. Conclusion

The researchers, through their engagement with the LTFRB, government authorities, and local public transport operators in Davao del Sur, contextualized the operations of mini-buses (MAKIBAMAG, DASUTRANSCO, and DIPATRANSCO) using a collaborative approach to interviews government authorities, cooperatives, and operators. Based on interviews, it was clear that public utility vehicle modernization programs provide the industry with a comprehensive and all-encompassing strategy and support public transportation that is dependable, efficient, and safe. Results showed that the legal framework, public-private partnership towards sustainability, and impact on the economy are pressing factors that strengthen the operations of mini-buses in Davao del Sur. The operations of mini-buses give a comfortable life for all Digoseños by providing a safer, more efficient, reliable, convenient, affordable, climate-friendly, and environmentally sustainable transportation system in the province. The mini-buses provide a safe, efficient, reliable, convenient, affordable, environmentally friendly transportation system in the province, improving the lives of all Digoseños with comfort.

## 6. Recommendation

The operations impacted the legal frameworks of this program as it required the development, amendments, and operational guidelines to ensure compliance and smooth execution of the program, the PPP collaboration to plan, finance, and implement the program effectively, and impacted the economy as it creating demand and generating opportunities in the transportation sector, to support a more efficient and environmentally friendly public transportation system. Hence, the authors recommend the following:

1. Maintain a well-maintained fleet of mini-buses to ensure reliability and safety. LTFRB and government authorities should strictly implement a policy in regular maintenance schedules issuing driver licenses registering all motorized land vehicles and submitting plans for local public transportation routes.
2. Implement stringent safety measures, including regular vehicle inspections, driver training programs, and adherence to traffic regulations, to ensure the safety of passengers and drivers.
3. Collaborate with local authorities, other transportation providers, and community stakeholders to address regulatory issues, coordinate services, and integrate mini-bus operations into the broader transportation network effectively.

## REFERENCES

- Abduljabbar, R. L., Liyanage, S., & Dia, H. (2022). A systematic review of the impacts of the coronavirus crisis on urban transport: Key lessons learned and prospects for future cities. *Cities*, 127, 103770.
- Callicott, J. B., & Mumford, K. (1997). Ecological sustainability as a conservation concept: Sustentabilidad ecologica como concepto de conservacion. *Conservation biology*, 11(1), 32-40.

- Campbell, J., Johnston, B., Kirkland, J., Martinez, R., McCallion, T., Stewart, D., . . . Nartea, D. (2017). CET.
- Creswell, J. W. (2013). Steps in conducting a scholarly mixed methods study.
- Dumitru, E. V. (2017). Development of public transport and its effects on the economy. *Dezbateri Social Economice*, 6(1), 18-24.
- Kaepplin, F.-X. G.-M. (2023). *The Journey Towards Creating a Regional Transportation Coordinator in the Bay Area*. UC Davis.
- Liao, F., & Correia, G. (2022). Electric carsharing and micromobility: A literature review on their usage pattern, demand, and potential impacts. *International Journal of Sustainable Transportation*, 16(3), 269-286.
- Mateo-Babiano, I., Recio, R. B., Ashmore, D. P., Guillen, M. D., & Gaspay, S. M. (2020). Formalizing the jeepney industry in the Philippines—A confirmatory thematic analysis of key transitional issues. *Research in Transportation Economics*, 83, 100839.
- Mettke-Hofmann, C. (2017). Avian movements in a modern world: cognitive challenges. *Animal Cognition*, 20(1), 77-86.
- Mohammed, S. I., & Lateef, N. A. A. (2020). The Potentiality of Utilizing ITS Applications in Developing the Public Transportation in Dohuk City. Paper presented at the IMDC-SDSP 2020: Proceedings of the 1st International Multi-Disciplinary Conference Theme: Sustainable Development and Smart Planning, IMDC-SDSP 2020, Cyberspace, 28-30 June 202.
- Moradi, A., & Vagnoni, E. (2018). A multi-level perspective analysis of urban mobility system dynamics: what are the future transition pathways? *Technological Forecasting and Social Change*, 126, 231- 243.
- Ogden, K. (2017). *Urban goods movement: a guide to policy and planning*: Routledge.
- Perez, R. E., Ng, A. C. L., & Tiglao, N. C. C. (2022). Enhancing policy capacity through Co-design: the case of local public transportation in the Philippines. *Policy Design and Practice*, 5(1), 103-121.
- Policy, C. (2021). Budget Research Department.(2020). Policy Brief No. 2020-02-Looking into the Implementation of Public Utility Vehicle Modernization Program, B2020-2002\_PUV.
- Polinar, M. A. N., & Payao, R. B. (2022). Multi-level Car Parking as a Viable Solution to Traffic Issues in Davao City. *International Journal of Multidisciplinary: Applied Business and Education Research*, 3(11), 2191-2197.
- Pontawe, J., & Napalang, M. S. (2018). Examining the Potential Significance of Industry Consolidation and Fleet Management in Implementing the DOTr's PUV Modernization Program: A Case Study of 1TEAM. *Philippine Transportation Journal*, 1(2), 47-58.
- Romero, S., Guillen, D., Cordova, L., & Gatarin, G. (2014). Land-based transport governance in the philippines: focus on Metro Manila. Inclusive Mobility Project, Quezon City, Ateneo School of Government, Ateneo de Manila University.
- Rothenberg, S. (2007). Sustainability through servicizing. MIT Sloan management review. *Solutions*, S. (2022). Exploratory factor analysis.
- Sunio, V., Gaspay, S., Guillen, M. D., Mariano, P., & Mora, R. (2019). Analysis of the public transport modernization via system reconfiguration: The ongoing case in the Philippines. *Transportation Research Part A: Policy and Practice*, 130, 1-19.
- Tariq, S., & Zhang, X. (2020). Critical failure drivers in international water PPP projects. *Journal of Infrastructure Systems*, 26(4), 04020038.
- Tiglao, N. C. C., Ng, A. C. L., Tacderas, M. A. Y., & Tolentino, N. J. Y. (2023). Crowdsourcing, digital co-production and collaborative governance for modernizing local public transport services:

- The exemplar of General Santos City, Philippines. *Research in Transportation Economics*, 100, 101328.
- Vos, R. O. (2007). Defining sustainability: a conceptual orientation. *Journal of Chemical Technology & Biotechnology: International Research in Process, Environmental & Clean Technology*, 82(4), 334- 339.
- Wagner III, J. A., & Hollenbeck, J. R. (2020). *Organizational behavior: Securing competitive advantage*: Routledge.
- White, P. R. (2016). *Public transport: its planning, management and operation*: Routledge.