Driving Change: Lessons from E-Jeepney Early Adopters in the Philippines

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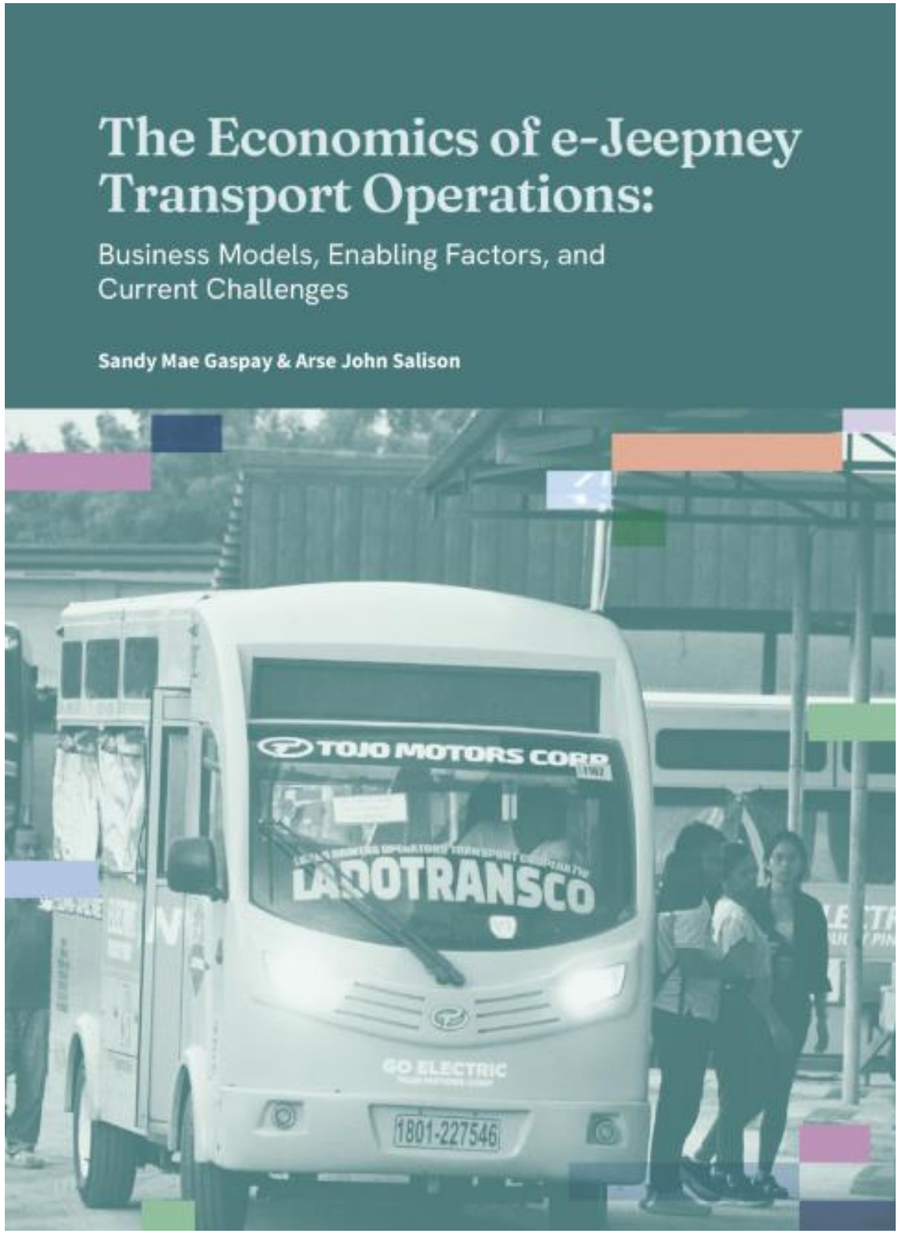


The Economics of E-Jeepney Transport Operations: Business Models, Enabling Factors, and Current Challenges

by Sandy Mae Gaspay and Arse John Salison

https://icsc.ngo/portfolio-items/the-economics-of-e-jeepney-transport-operations/

EVIDA Law (2022)

Electric Vehicle Industry Development Act (EVIDA)

2022 - Republic Act (R.A.) No. 11697 or the Electric Vehicle Industry Development Act (EVIDA) lapsed into law.

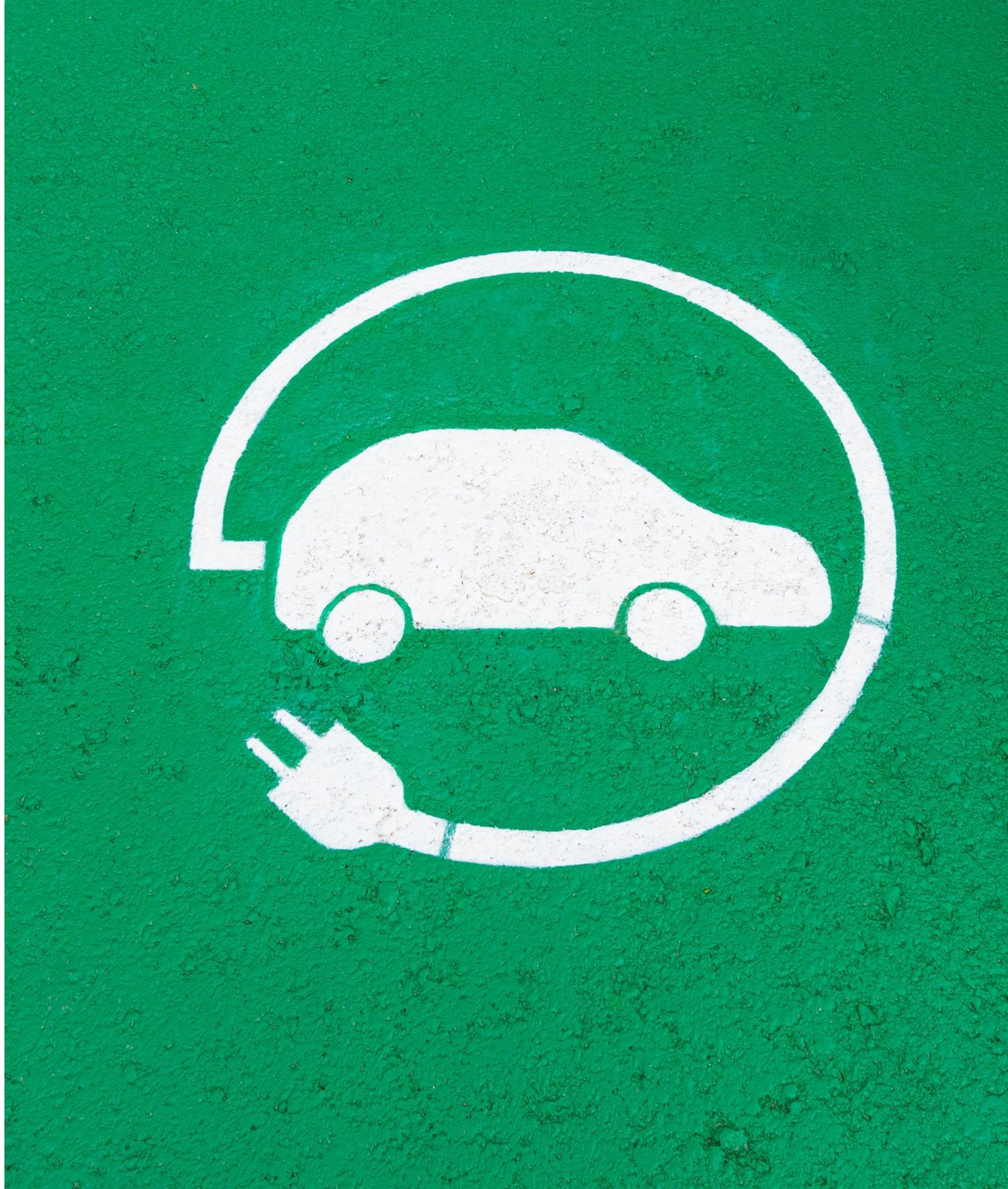
EVIDA and the provisions outlined within it foresee a future wherein a transformative shift to electric vehicles will lead us to our independence from imported fossil fuel.

EVIDA provisions essential to EV adoption and intergration in the Public Transportation System:

- **Institutionalizing fiscal and non-fiscal incentives for EVs**

- **Mandating the creation of a Comprehensive Roadmap for the Electric Vehicle Industry (CREVI)** - an annual work plan that covers areas which are essential to the development of the electric vehicle industry.

- Invigorating the electric vehicle industry development ecosystem by **mobilizing key national departments and their attached agencies** as well as the Local Government Units



Objectives:

- Draw lessons from the business models of early adopters of Electric jeepneys/ E-jeepneys.

- Determine critical success factors and challenges to successful operations.

Case study approach:

- 4 entities (3 cooperatives, 1 corporation) from 3 cities that were early adopters of E-jeepneys [Referred to as C1,C2,C3,C4]

Entities interviewed:

Entity Name	Location	Number of EV's with franchise	Convention
Metro Gensan Transport Cooperative (MGTC)	General Santos City	28	C1
Lagao Drivers Operators Transport Cooperative (LADOTRANSCO)	General Santos City	41	C2
South Metro Transport Services Cooperative, Inc. (TSCI)	Metro Manila	17	C3
United Drivers and Operators Transport Cooperative Transport Service Inc. (UDOTCO-TSI)	Lapu-lapu City, Cebu	100	C4

Operational characteristics

	C1	C2	C3	C4
Round Trips per day	10	6	8	5
Route Length (Round Trip)	15km	24km	11km	24km
Number of Operating hours	8 + Overtime	8 + Overtime	10-12	10-12
Number of E-Jeepney Units	28	41	17 but only 15 operating	100 but only 40 operating

Operational activities

Factor	C1	C2	C3	C4
Battery Management	Battery Swapping	Battery Swapping	Initially Battery Swapping, but currently overnight charging is sufficient	Fast Charging, about 2-3 hours charging at night/end of day for 12 hours use
Battery Technology	Cobalt + Lithium	Lithium	Initially Lead-Acid, then shifted to Lithium	Initially Lead-Acid, then shifted to Lithium
Dispatching	Manual, headways vary depending on peak and offpeak times	Manual, headways vary depending on peak and offpeak times	Manual, headways vary depending on peak and offpeak times	Manual + GPS based, headways vary depending on peak and offpeak times
Driver and Vehicle Monitoring	Random inspections, CCTVs	Random passenger manifests, CCTVs, and Passenger count auditors	None. Driver quota implemented.	CCTVs, random inspections, GPS installed inside batteries
Fare Collection	Manual fare collection	Combination of tap cards and cash	Cash payments (reverted from AFCS)	Cash payments (reverted from AFCS)

Key Resources

Factor	C1	C2	C3	C4
Financing Strategy	In-house financing with manufacturer	Bank loan	In-house financing with manufacturer	Financing provided by the partner.
Government Assistance (Local)	Subsidy per unit from climate fund	Subsidy per unit from climate fund	None	Local govt. support for training and initial garage area
Government Assistance (National)	DOTr equity subsidy	DOTr equity subsidy	None	None
Capital Building	Mandatory daily and monthly member collections	Soft loans, grants, and monthly member contributions	Member contributions; grant applications	-
Battery Investment	Initially rented, then invested in spare batteries (thru service contracting earnings)	Initially rented, then invested in spare batteries (thru service contracting earnings)	Initially bought cheap Lead-Acid batteries, switched to leasing (monthly rental fee) customized batteries with included service and maintenance	Initially bought Lead-Acid batteries, switched to leasing (monthly rental fee) customized batteries with included service and maintenance
Charging Stations	Manually setup charging stations using included battery chargers	Manually setup charging stations using included battery chargers	Manually setup charging stations using included battery chargers	Manually setup charging stations using included battery chargers

Revenues, Profit sharing, and Salaries

Factor	C1	C2	C3	C4
Additional revenue streams	Terminal rental, fleet management fees	Terminal fees, advertising, other businesses	None	None
Operator/ Franchise holders Incentives	Monthly Compensation + Annual Dividends	Php 80k payment paid over 2 years, Monthly Compensation + Annual Dividends	Monthly Compensation + Annual Dividends	Monthly Compensation + Annual Dividends
Driver payment and Incentives	Salary + 40% of excess remittance as incentive	Salary + overtime pay (hourly)	No salary, 100% of excess of daily quota	Salary + overtime pay (hourly)

Highlights of Business Models Observed

EURO-4 and Electric jeepneys in garage

Battery swapping station

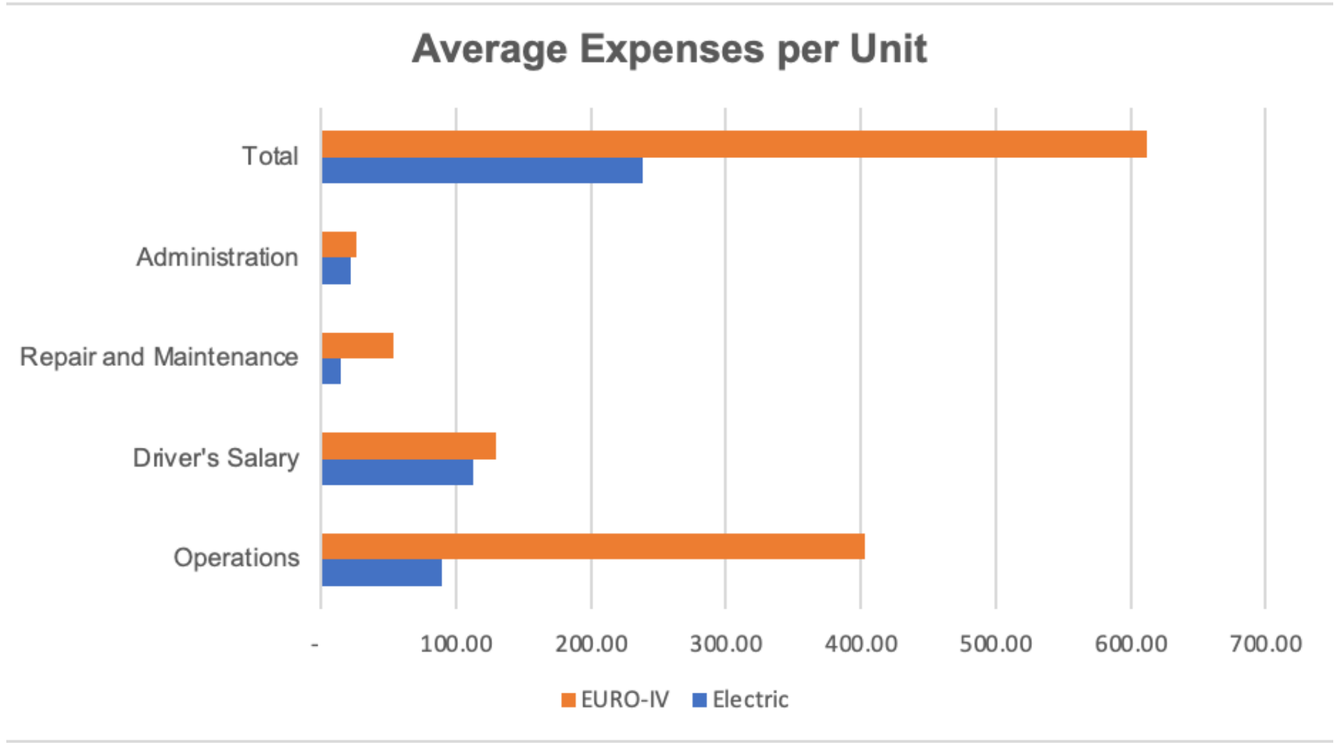
- Some operate a mix of electric and Euro 4 units, gradually built up their fleet
- Set-up own battery swapping/ charging stations
- Financing mainly through member contributions + subsidies & loans
- **Thriving entities**: sole operator in route, has other revenue streams, experienced in running cooperatives
- **Struggling entities**: not sole operator in route, transport is the only revenue stream, relatively inexperienced

Analysis of Financial Performance.

Euro 4 vs EV

Case of C1

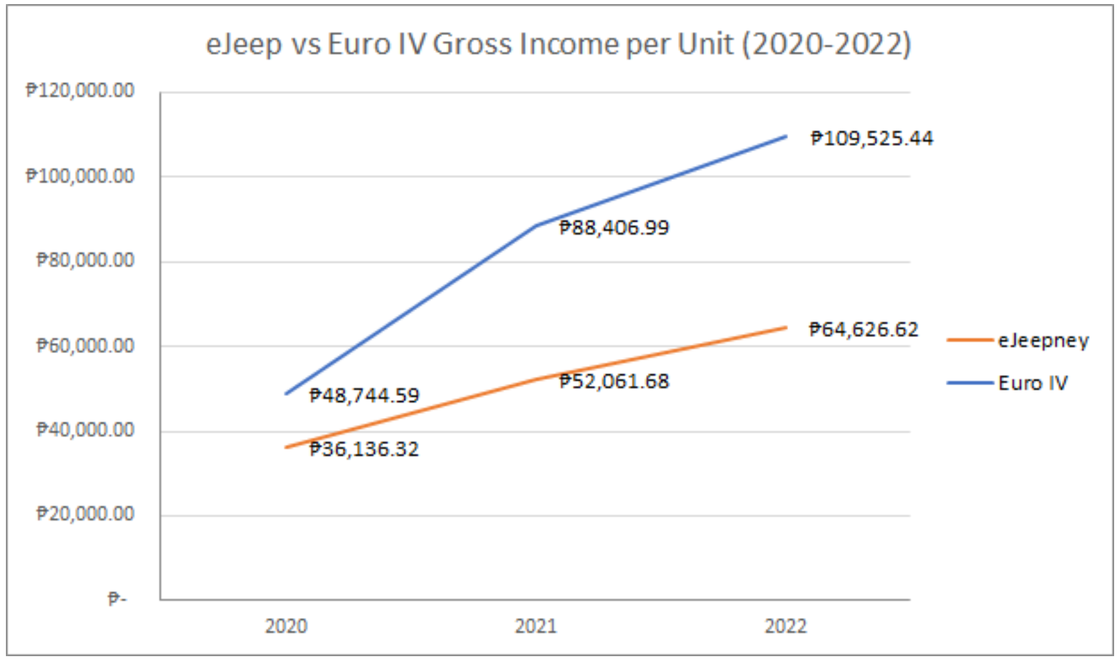
Average Operating Expenses per Unit (Euro IV vs EJeepney)

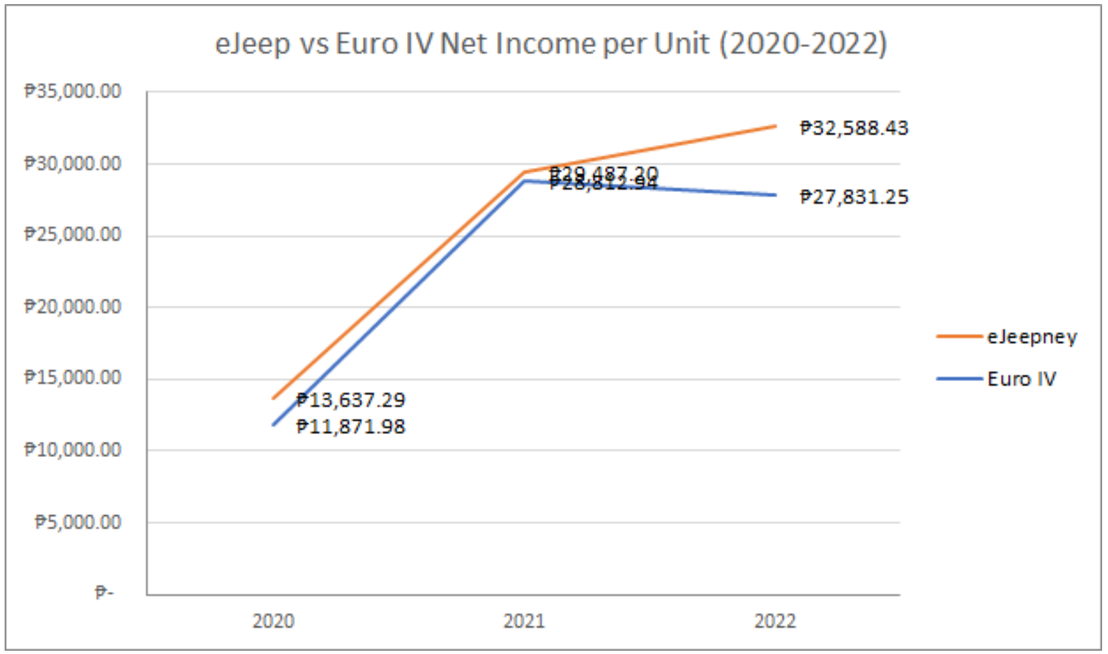


	Average Expense Per Unit, in '000		% of Total Expense	
	Electric	EURO-IV	Electric	EURO-IV
Operations	89.49	403.19	38%	66%
Driver's Salary	112.21	129.14	47%	21%
Repair and Maintenance	14.74	53.49	6%	9%
Administration	21.48	26.27	9%	4%
Total	237.92	612.09		

Total expenses for Ejeepney is significantly lower compared to Euro IV, with the highest disparity seen in operating costs.

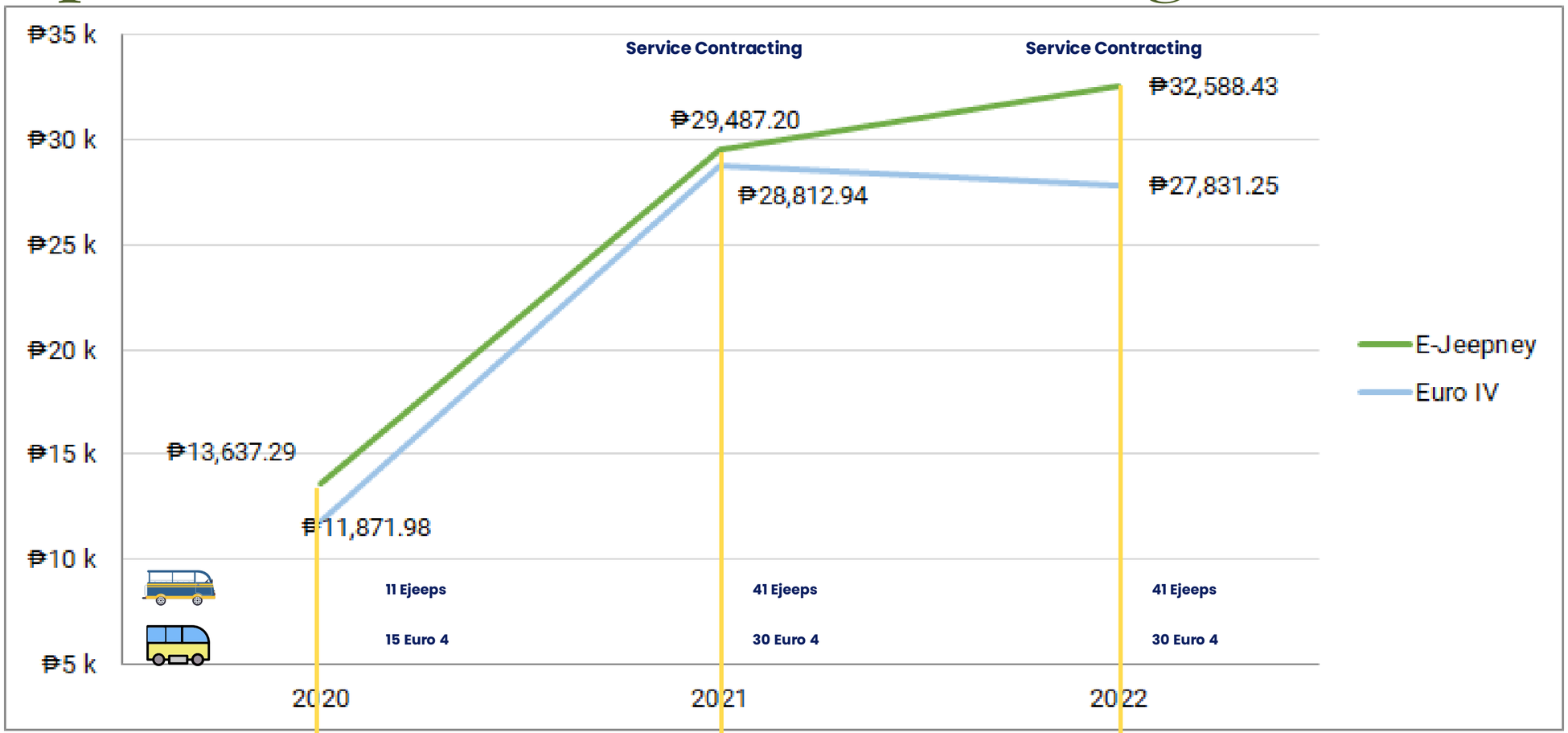
Average Income per Unit (Euro IV vs EJeepney)





Euro IV units have higher gross income indicating that the riding public might have a preference towards Euro IV units. Possible reasons may be because of comfort due to aircon/ more frequent trips for Euro IV. However, in terms of net EJeepney is observed to be higher than Euro IV.

Participation in Service Contracting



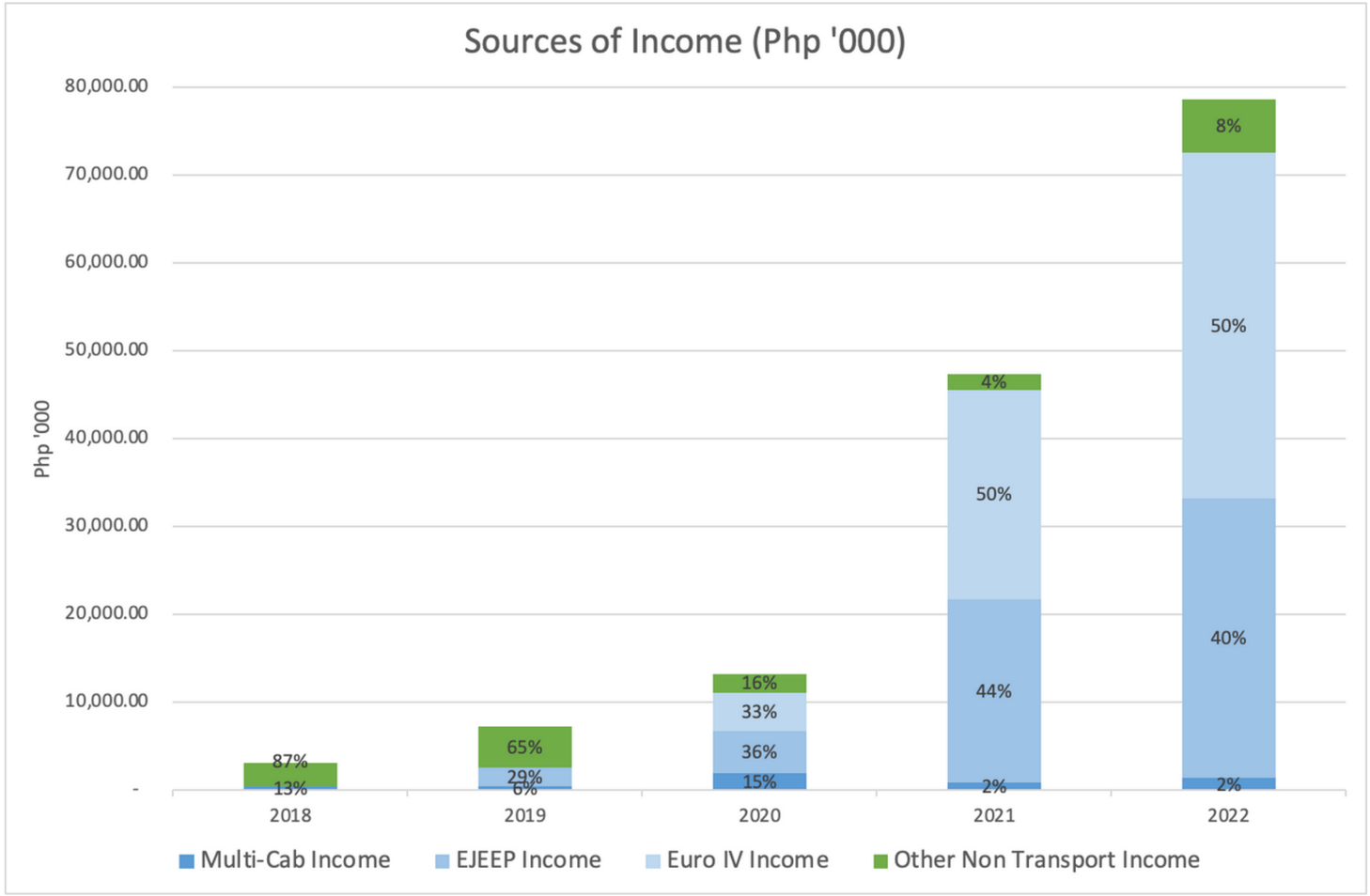
- **Operating 11 of EJeepney units**
- **15 units of Euro IV Jeepney units started second half of 2020**

- **Start of Service Contracting**
- **Added 15 of EJeepney units in the first half of 2021, then another 15 in the second half of 2021**
- **Added 15 units of Euro IV Jeepney units started second half of 2021**

- **41 units of Ejeepney units in operation**
- **30 units of Euro IV units in operation**

Transport and Non-Transport Revenue Sources

Other Income Category	Percent Share
Gasoline Station	30.77%
Rent Income	13.59%
Management Fees	10.52%
Oils, Lubricants, Repair Services	10.34%
Misc	8.15%
Incentives	5.93%
Daily Dues	5.89%
Advertising Income	2.95%
Membership Dues	2.35%
Insurance Commission Income	2.32%
Solicitation	1.47%
Terminal Income	1.43%
Membership Fees	1.30%
Penalties	1.02%
Drivers Fund - Route 10 & 11	0.83%
Franchise Processing Fee	0.66%
Fees and Certifications	0.26%
Trading-Lado	0.15%
Bank Interest	0.05%



Success Factors in E-jeepney operations:

1. **Operators willing to try EVs due to attractive deals from manufacturers**
   - Ex: Bulk discount; Alternative payment schemes (battery leasing, zero downpayment)

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Tricycle competing with jeepney

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3. **Gradual growth of vehicle fleet and EV infrastructure.**

(a) Charging of Batteries Inside C4's Garage

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3. Gradual growth of vehicle fleet and EV infrastructure
4. **Alliance with other operators.**


https://blog.teamsatchel.com/sharing-best-practice-in-teaching

Source: Public Transport Alliance of Gensan's Facebook page

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5. **Non-transport revenue sources**

C1's Non-Transport Revenue Distribution

Other Income Sources	Percent Share
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3. Gradual growth of vehicle fleet and EV infrastructure.
4. Alliance with other operators.
5. Non-transport revenue sources
6. **Operational benefits of EV's**

E-jeepney vs Euro-4 Average Monthly Expense (C1 case)

	Average Monthly Expense Per Unit, USD* 1 USD = 58.55 Philippine peso			
	E-Jeepney	**Euro 4**	**Difference (Euro 4- E-Jeepney)**	**Euro 4/ E-Jeepney**
Operations	$ 157.90	$ 844.04	$ 686.14	5.3
Driver's Salary	$ 189.33	$ 220.95	$ 31.62	1.2
Repair and Maintenance	$ 26.00	$ 94.95	$ 68.95	3.7
Administration	$ 24.57	$ 31.19	$ 6.61	1.3
Total	**$ 397.81**	**$ 1191.13**	**$ 793.32**	**3.0**

Ongoing Challenges to EV Adoption/ Modernization

1. Lack of **local government support** (route planning, traffic management)
2. Many **support policies and infrastructure are not in place**, making operators revert to traditional operations to assure profits:

Lack of..	**Lead to..**
Policy for dealing with competing modes	Financial losses, driver quota system
Infrastructure support for EV charging	Financial losses, curtailed expansion to bigger fleet
System for cashless payments	Driver fare pilferage
Realistic consolidation deadline	Unrealistic pay-offs to existing operators

3. **Industry preparedness** for “modernized” operations: financial management, EV technology.

Concluding Remarks

- Not all operators are created equal: success depends on the right mix of people, politics, economics.

- Support systems need to be in place (infrastructure, workforce, institutions)
  → **Modern vehicles, traditional operations.**

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Thank you for your attention.