Smart Freight Centre

Shell Foundation



Driving Income Uplift:

Designing Inclusive EV Financing for India's Freight Drivers

July 2026

New Delhi, India

About Smart Freight Centre

Smart Freight Centre (SFC) is a globally active non-profit organization for climate action in the freight sector. Our goal is to mobilize the global logistics ecosystem, in particular our members and partners, in tracking and reducing its greenhouse gas emissions. We accelerate the reduction of logistics emissions to achieve a zero-emission global logistics sector by 2050 or earlier, consistent with 1.5° pathways.

About Shell Foundation

For over 25 years, Shell Foundation, an independent charity registered in England and Wales, has empowered underserved customers to raise their incomes while lowering emissions. The Foundation supports early-stage innovations; helps the best of them to reach millions of people; and de-risks capital to prove those models are commercial at scale. Across Asia and Africa, the Foundation enables resilient prosperity among three core groups of people: smallholder farmers, transporters, and micro-entrepreneurs.

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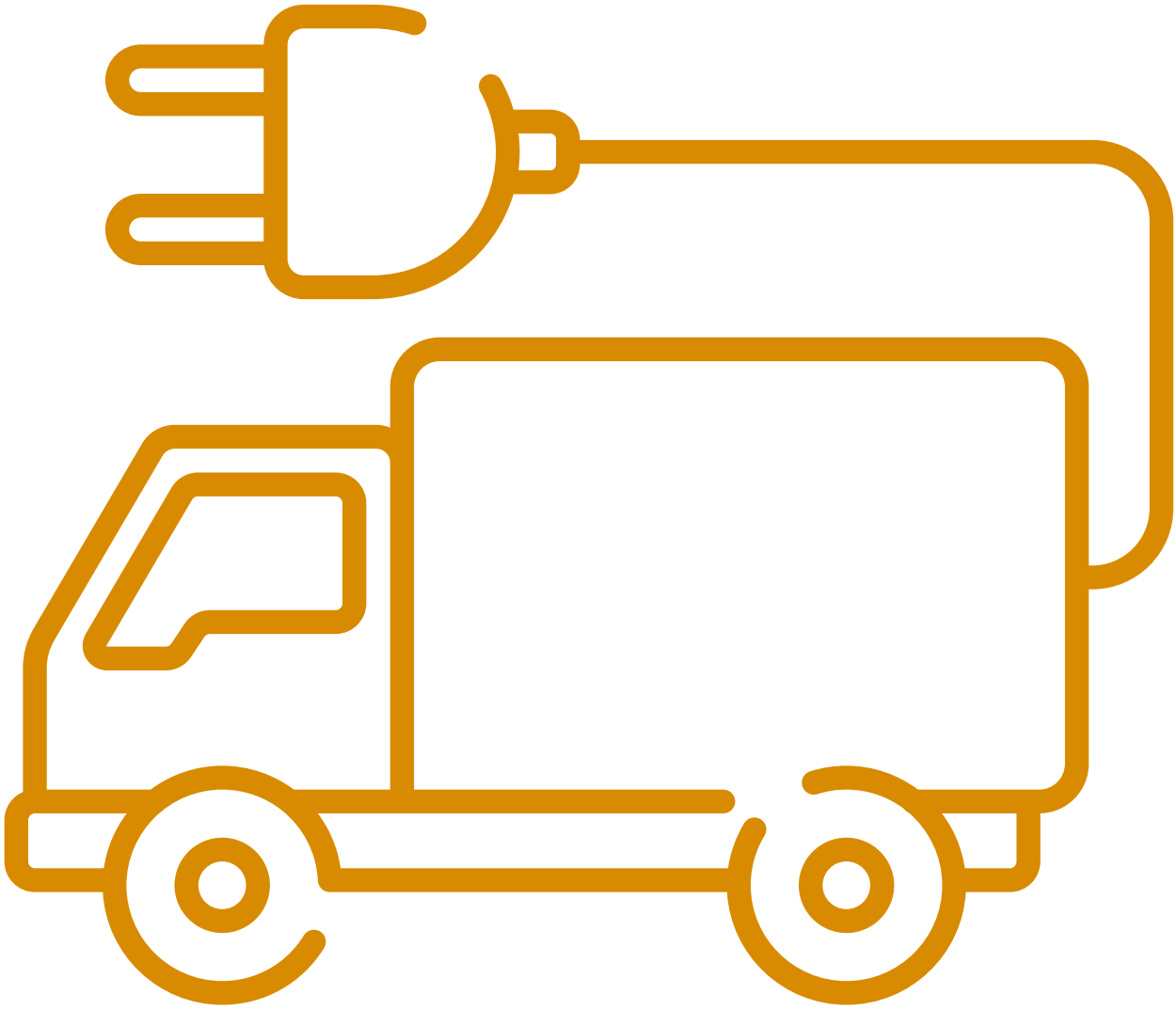




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Foreword

The transition to electric mobility represents one of the most significant opportunities to decarbonize the global freight sector. In India, where freight demand continues to grow rapidly, this transition is already underway. However, its long-term success will depend not only on technology, infrastructure, or policy but on the people at the center of the system: freight drivers.

For millions of drivers across India, freight is both a livelihood and a pathway to economic mobility. Yet, this profession is often characterized by income volatility, limited access to formal finance, and rising operating costs. As electric vehicles (EVs) enter the freight ecosystem, they bring the potential to fundamentally reshape this reality by reducing operating costs, improving income stability, and enabling new pathways to asset ownership.

This report, developed jointly by **Smart Freight Centre** and **Shell Foundation**, brings together evidence from a large-scale study of over **1,500 drivers across 11 states** in India. It offers a detailed, ground-level perspective on how the transition to electric freight is impacting driver livelihoods, and what conditions are required to ensure that these benefits can scale.

The findings point to a clear conclusion: electric freight can improve driver income, but the extent of these benefits is shaped by how vehicles are financed and how freight demand is structured. Models that combine predictable utilization with affordable and accessible financing are critical to enabling a transition that is both economically viable and socially inclusive.

As the sector moves from early pilots to scaled deployment, the focus must shift toward designing systems that work for drivers ensuring that they are not only participants in the transition, but beneficiaries of it. This will require coordinated action across financial institutions, mobility platforms, policymakers, and development partners.

We hope that this report contributes to advancing that dialogue and supports the development of solutions that align climate goals with inclusive economic growth.



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Acknowledgments

This report has been developed through a collaborative effort between Smart Freight Centre and Shell Foundation, whose partnership and strategic guidance have been instrumental in shaping both the direction and depth of this study.

We would like to extend our sincere appreciation to the **Shell Foundation** team for their continued support and engagement throughout this work. In particular, we acknowledge the contributions of Amresh Sharma, Dara Owoyemi, Natalie Wong, Emma Stephenson and Habib Nuhu, and the broader Shell Foundation team for their insights on driver livelihoods, financing structures, and inclusive transition pathways.

At the core of this study are the 1,500+ freight drivers across 11 states in India who generously shared their time, experiences, and perspectives. Their inputs form the foundation of this report, and we are deeply grateful for their openness and trust.

We also thank the mobility platforms, **MoEVing, Omega Seiki Mobility and Bluwheelz,** logistics service providers, and fleet operators who supported access to driver networks and provided valuable operational insights. We would particularly like to acknowledge **Vikash Mishra – Founder & CEO and Megha Rajpal – Head, Strategy & Growth and Sanjay Sharma – Head of Operations at MoEVing** for their active support, coordination, and valuable contributions throughout the study. Their engagement was instrumental in facilitating driver outreach and enabling the successful execution of the research. Our appreciation extends to financial institutions and ecosystem stakeholders who contributed perspectives on EV financing, risk assessment, and emerging business models.

This work has also benefited from the contributions of research partners, survey teams, and field coordinators who enabled data collection and on-ground engagement across diverse geographies. Within Smart Freight Centre, we acknowledge the efforts of the India team across research, partnerships, and communications for their role in delivering this study.

This report reflects a shared commitment to advancing an EV transition that is not only environmentally sustainable, but also economically inclusive ensuring that freight drivers are central to the future of clean logistics.



Sanya Shahi
Principal, Programs & Partnerships,
Smart Freight Centre

Testimonial

At MoEVing, sustainability is measured not only by environmental impact, but also by the economic well-being of the driver partners who are at the core of the freight ecosystem. The transition to electric mobility can only be truly successful if it improves livelihoods alongside reducing emissions.

This report reflects a question that has been central to our work from the beginning: how can the benefits of electrification be made accessible and sustainable for drivers? Through multiple engagements with the teams including driver surveys, field workshops, and operational reviews we have sought to ensure that the realities of day-to-day freight operations are accurately reflected in the findings.

In our experience, access to affordable and appropriately structured financing remains one of the most significant barriers to EV adoption and income enhancement for drivers. Addressing this challenge is not merely a matter of enabling vehicle ownership it is fundamental to building an equitable and scalable electric freight ecosystem.

We extend our appreciation to the teams at the Smart Freight Centre and Shell Foundation for the rigour, depth, and practical perspective they have brought to this work. We hope this report serves as a valuable resource for financial institutions, policymakers, OEMs, and logistics platforms working to shape the next phase of India's electric freight transition.



1

At a Glance



1. At a Glance

India's freight electrification is entering a critical phase. Based on one of India's largest primary studies of freight driver livelihoods, this report demonstrates that financing is not vehicle technology. It is the critical enabler of an inclusive EV freight transition.

1,500+	11	~25%	3
Drivers surveyed	States covered	Avg. income uplift, EV vs prior income	Operating models compared

Top 5 Headline Findings vs. Top 5 Strategic Recommendations

No	Headline Findings	Strategic Recommendations
1	**EVs drive higher income:** EV adoption yields a ~25% income uplift over pre-EV professions.	**Extend Loan Tenures:** Shift to ~6-year loan terms to reduce monthly EMI burdens.
2	**Financing determine outcomes:** EMI terms determine who actually retains the operational savings.	**Tailor Credit Products:** Design distinct financing products for salary, lease, and owner-drivers.
3	**Lease models perform best:** Lease-based operating models are the most financially viable and stable across scenarios.	**Leverage Alternative Data:** Score drivers based on platform utilization and earnings history rather than traditional credit scores.
4	**Utilization drives income:** Platform-linked demand aggregation is essential to stabilize income streams.	**Scale Blended Finance:** Deploy first-loss capital mechanisms to de-risk lending to owner-cum-drivers.
5	**Owner-drivers carry the highest risk:** Weak credit access and high EMI burdens restrict their net income gains.	**Strengthen Demand Aggregation:** Expand platform-guaranteed trip volumes to maximize daily mileage.

Strategic Implications by Stakeholder

Implications	
Government & Policy	Prioritize financing-support mechanisms alongside direct vehicle subsidies and purchase incentives
Financial Institutions	Adopt driver-centric lending: offer ~6-year tenures, lower interest rates, and alternative credit scoring models
Platforms & Aggregators	Expand demand aggregation and trip guarantees to maximize daily vehicle utilization and de-risk loan repayments
OEMs & Fleet Operators	Scale structured lease-to-own models integrated with platform-level operational and utilization data
Development Partners	Deploy blended-finance pilots and first-loss guarantees to prove bankability before scaling commercial capital

Key Insights

Driving Income Uplift Through Inclusive EV Financing

India's freight electrification presents an opportunity to advance both climate objectives and driver livelihoods. This study demonstrates that financing, rather than vehicle technology, determines whether electric freight delivers sustainable income gains.



EVs raise income

~25% higher income vs. pre-EV professions, driven by lower fuel & maintenance costs.



Financing is the lever

EMI structure, tenure and rate decide whether savings reach the driver.



Business model decides scale

Lease-based models outperform; owner-drivers face the steepest climb.

Three Operating Models

Lease-based	Salary-based	Owner-cum-driver
Most financially viable and stable segment across every scenario tested.	Income stability and moderate uplift, but capped earning potential.	Highest risk — weak credit access, rarely reaches mileage needed to match ICE income.

Key levers for Improving Driver Incomes



6 yrs

Extending loan tenures eases repayment



↓ Rate

Modest interest-rate reductions improve viability



↑ Use

Higher utilization through platform-linked contracts

Emerging opportunity — Women in Freight:
Representation remains limited today, but improved driving comfort, lower operational complexity, and platform-based employment models are opening the door to greater inclusion of women drivers in the sector.

The next phase of India's freight electrification must move beyond vehicle deployment to financing systems that improve livelihoods, reduce risk and enable inclusive growth.

2

India’s EV Transition Is Also a Livelihood Transition



2. India's EV Transition Is Also a Livelihood Transition

India's freight sector is entering a decisive phase. As electric vehicles (EVs) gain momentum across last-mile and short-haul logistics, the conversation is often centred on emissions reduction, technology readiness, and infrastructure deployment.

Yet, behind every freight movement is a driver and the success of this transition will ultimately depend on whether it works for them.

For millions of drivers across India, freight is more than a job. It is a primary source of income, often supporting entire families, and in many cases, a pathway toward financial independence. However, this livelihood is shaped by structural challenges, including income volatility, rising fuel costs, and limited access to formal financial systems.

The transition to electric freight has the potential to change this equation.

2.1 The Reality of Freight Driver Livelihoods

Freight drivers, particularly in the last-mile and short-haul segments, operate within fragmented and predominantly informal systems that shape their earning potential and financial resilience.

Many enter the sector through informal networks, contractor arrangements, or platform-based operating models, often without documented income or employment histories. This limits access to formal finance and constrains opportunities for long-term economic mobility.

Driver incomes are inherently variable, fluctuating with trip availability, route allocation, downtime, and seasonal demand. As a result, even small disruptions such as lower trip volumes or unexpected expenses can significantly affect take-home income.

As illustrated in the figure, freight driver livelihoods are shaped by a combination of structural challenges that influence income stability, financial resilience, and access to economic opportunities.

1. **Limited credit access**
   No documented income
   Costlier NBFC/ informal loans
2. **Thin, fluctuating margins**
   Idle time between trips and gaps in demand reduce daily take-home
3. **Fuel price volatility**
   Largest expense operating costs, with drivers absorbing most of this risk
4. **Limited capacity to save assets**
   High operating cost limits ability to invest and manage shocks

For a typical ICE driver, fuel represents the largest operating expense, leaving limited surplus after maintenance, vehicle payments, and household expenses.

As a result, income stability depends not only on earnings but also on the predictability of operating costs. Fuel price volatility therefore remains a significant constraint on driver livelihoods under traditional freight operations.

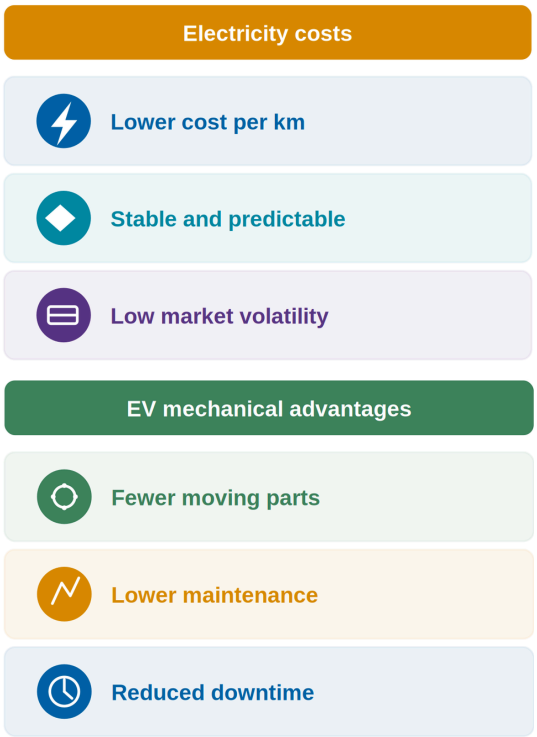
2.2 EVs as a Structural Shift in Driver Economics

Electric vehicles (EVs) introduce a fundamentally different operating model for freight drivers - one that has the potential to reshape both daily earnings and long-term financial outcomes.

At the core of this shift is a change in **cost structure.**

Under internal combustion engine (ICE) operations, a large share of a driver's daily earnings is spent on fuel. This cost is not only high, but also volatile, fluctuating with global oil prices and local market conditions. As a result, drivers have limited control over one of their largest expenses, making income inherently unpredictable. EVs eliminate this dependency.

Key Drivers of Lower EV Operating Costs



Together, the factors illustrated in the figure result in a structurally lower and more stable operating cost base.

From Variable to Predictable Economics

For drivers, this shift is not just about cost reduction. It is about greater control over earnings.

In ICE operations:

- Costs fluctuate daily
- Earnings are uncertain
- Financial planning is difficult

In EV operations:

- Costs are more predictable
- Margins are more stable
- Income becomes easier to anticipate and manage

This transition from variable to predictable economics is one of the most important, yet often under-recognized, benefits of electrification.

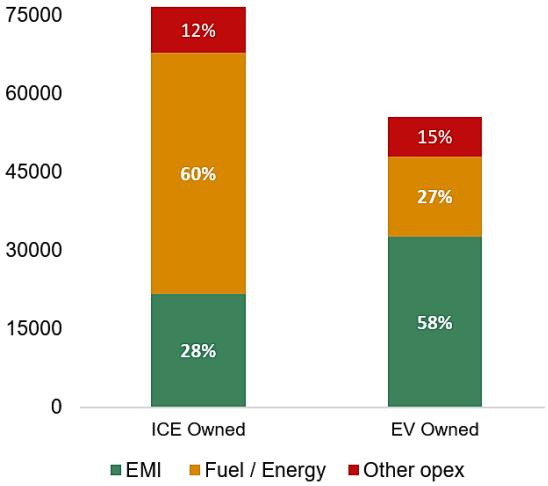


Figure: Monthly Operating Expense Split (ICE vs. EV)

Income Uplift Through Cost Efficiency

When paired with sufficient utilization, these cost savings translate directly into higher net income.

Drivers operating EVs can:

- **Retain a larger share of their earnings**
- **Reduce exposure to daily cost shocks**
- **Achieve more consistent monthly income**

This is particularly evident in high-utilization segments, where vehicles are used intensively and savings accumulate over time.

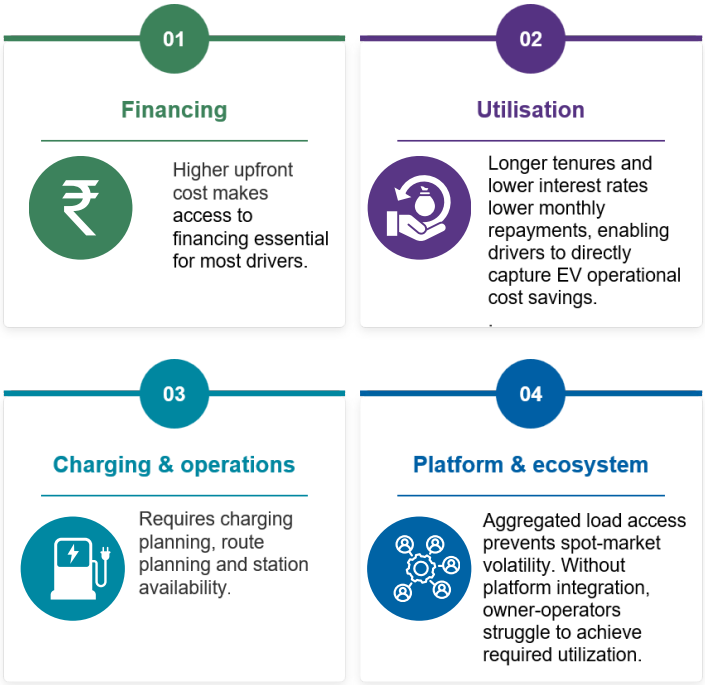
However, utilization remains a critical condition.

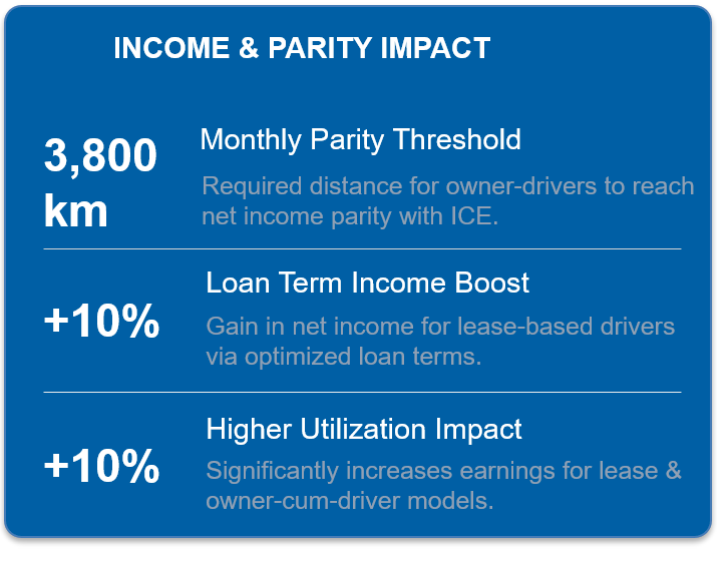
Without consistent trip volumes, the benefits of lower operating costs are diluted. This highlights an important dynamic: **EV economics improve margins but utilization determines total income.**

New Dependencies in the EV Model

While EVs improve operating economics, they also introduce new structural dependencies that shape driver outcomes. In practice, drivers access EVs through different ownership and financing arrangements. Salary-based drivers typically operate vehicles owned by fleet operators, lease-based drivers access vehicles through structured leasing arrangements, while owner-cum-drivers finance and operate their own vehicles. These models distribute financing obligations, utilization risk, and ownership benefits differently, resulting in distinct income outcomes.

These include illustrated below:



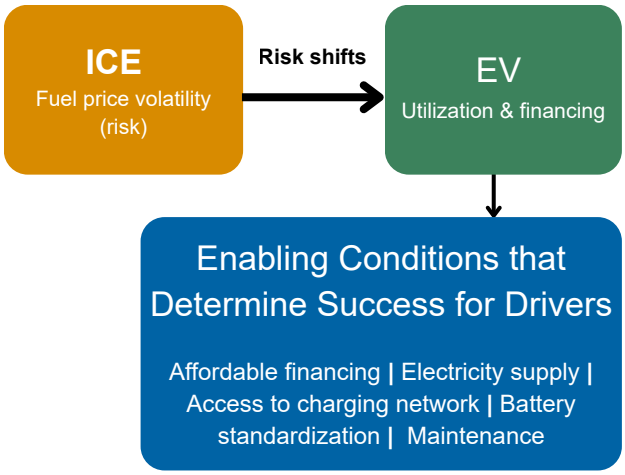






Shift in Risk Distribution

The transition to electric freight changes the nature of operational risk rather than eliminating it. While ICE operations are primarily exposed to fuel price volatility, EV operations depend more on access to affordable financing, vehicle utilisation and supporting ecosystem conditions. Financing therefore becomes the critical enabler of EV adoption, allowing drivers to overcome high upfront investment barriers and participate in the transition. As illustrated below, structured operating models supported by affordable financing and reliable infrastructure enable stronger income outcomes, whereas independent drivers without these enablers continue to face higher financial risk and income uncertainty.



2.3 The Missing Link: Linking Electrification to Livelihood Outcomes

Freight electrification in India is gaining momentum, supported by advances in vehicle technology, expanding charging infrastructure, and enabling policy measures. While these are essential enablers, they do not, by themselves, determine whether the transition delivers better livelihood outcomes for drivers.

The more fundamental question is:

Does electrification improve the economic reality of drivers and for whom?

To date, there has been limited structured evidence on how EV adoption affects drivers across different operating and financing conditions.

As illustrated in the figure, answering this question requires looking beyond vehicle technology to understand how electrification influences four interconnected dimensions of driver livelihoods.

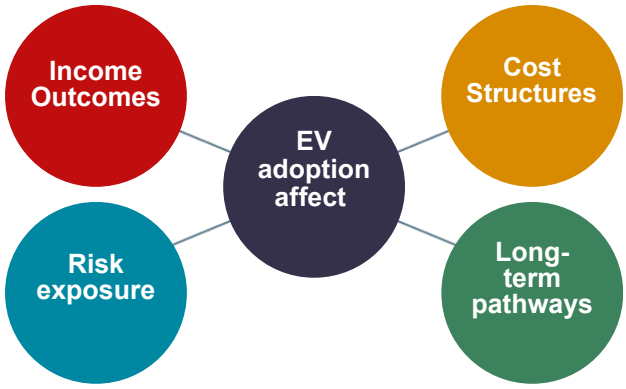


Figure: Understanding Driver Livelihood Outcomes in the EV Transition

Why This Gap Matters

Without a clear understanding of livelihood outcomes, there is a risk that EV adoption remains concentrated within specific segments particularly platform-linked fleets, while independent drivers are excluded due to persistent barriers related to financing and utilization. For the latter, financial risks may be disproportionately transferred to drivers, especially under high-cost lending structures, increasing their vulnerability rather than improving their economic position.

At the same time, the absence of income visibility and stability can make drivers hesitant to transition, slowing overall adoption. In effect, electrification may continue to progress, but not in a way that is inclusive or equitable across the broader driver ecosystem.

The evidence gap also reflects a broader challenge: EV adoption is often approached as a **vehicle-level transition**, rather than a **system-level transformation**.

In reality, driver outcomes are shaped by the interaction of the multiple factors illustrated in the figure below.

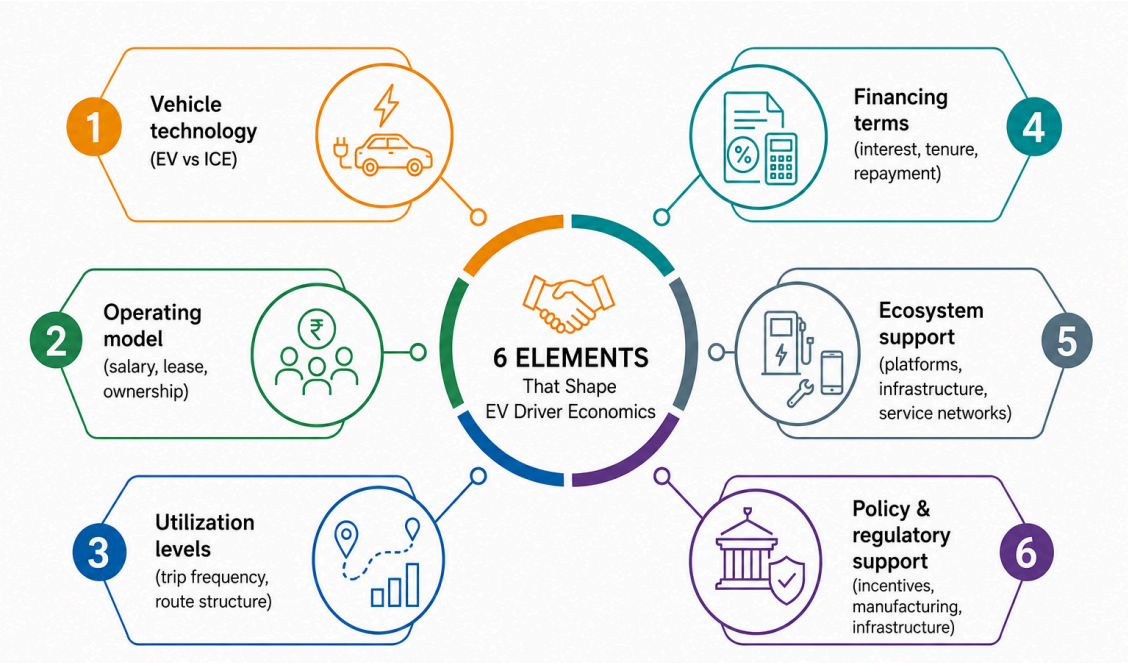


Figure: Interconnected Factors Shaping Driver Outcomes

Bridging the Gap Through Evidence

Addressing this gap requires moving beyond assumptions toward **driver-level evidence.** This means:

- Understanding real income outcomes
- Comparing EV performance against actual ICE baselines
- Analysing differences across driver archetypes
- Identifying the structural drivers of success and failure

This study is designed to do exactly that bringing together quantitative and qualitative insights to build a grounded understanding of how electrification is shaping livelihoods in practice.

2.4 The Financing Gap: Why the Market Is Not Scaling

While electric vehicles (EVs) improve the underlying economics of freight operations, adoption at scale remains constrained by financing rather than technology.

Across driver segments, the ability to transition to EVs depends less on willingness and more on access to affordable, appropriate, and driver-centric financing. The figure below highlights the key financing barriers limiting large-scale EV adoption.

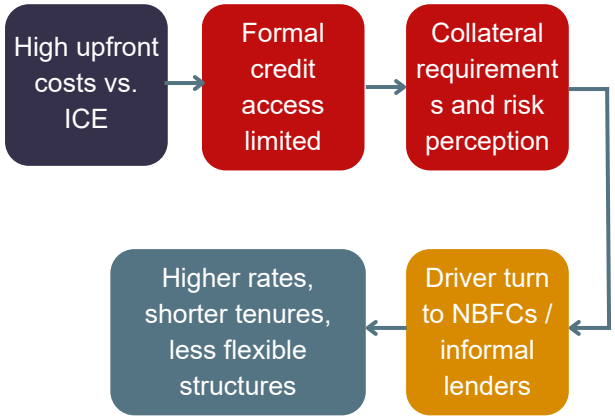


Figure: Key Financing Barriers Limiting the Scale-Up of EV Adoption Among Freight Drivers

Key Takeaway

This creates a structural barrier for the drivers who could benefit most from EVs, but are least able to access them.

Category	Institutions	Typical Rate*	Ideal For
Banks	SBI, HDFC, Axis, ICICI, IndusInd	**7–12%**	Drivers with formal documentation
Mainstream NBFCs	Shriram Finance, HDBFS, Cholamandalam, SK Finance, Tata Capital, L&T Finance, TVS Mobility	**12–22%**	Informal drivers, small fleet owners
EV-Focused NBFCs / Fintechs	Revfin, Ecofy, Three Wheels United, Mufin Green, Ohm Mobility, Greaves Finance, Euler Financing, Stride Green	**15–26%**	First-time EV buyers, low-credit drivers
Leasing / Subscription	Orix, ALD/LeasePlan, Alt Mobility, Vyom Finance, Sundaram Finance	**20–30%**	Drivers with no capital for upfront purchase

**Interest rates mentioned are indicative*

Figure: Financing Institutions in 3W & 4W (ICE + EV)

This creates a structural barrier for drivers who could benefit most from EVs but are least able to access them.

EMI Burden as the Dominant Cost Driver

Under EV operations, the cost structure shifts from variable fuel expenses to **fixed monthly repayments (EMIs).**

The analysis shows that:

- EMIs are the **single largest cost component** for EV drivers
- This burden is especially high for owner-cum-driver
- Higher interest rates and shorter tenures increase monthly repayment pressure
- Interest rates for EV loans can range significantly, depending on lender type and driver credit profile. In many cases, independent drivers face interest rates in the **range of 16–19%, reflecting lenders' perception of technology risk and borrower credit risk.**

While EVs reduce operating costs, high EMIs can offset these gains particularly in the early years of ownership. This highlights the importance of affordable and appropriately structured financing in ensuring that cost savings translate into improved and more stable driver incomes.

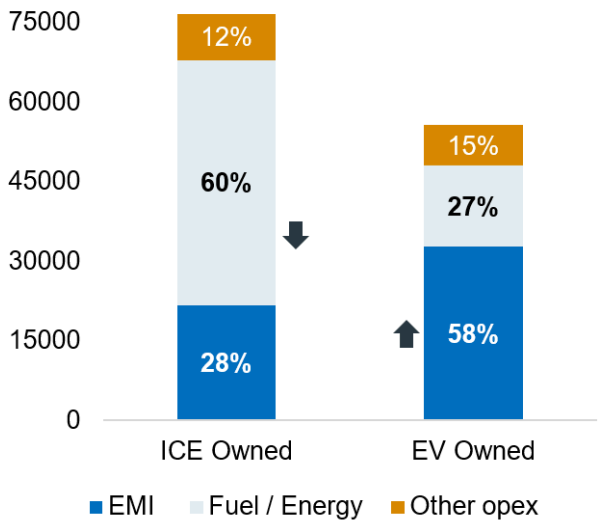


Figure: Monthly Operating Cost Structure (ICE vs. EV)

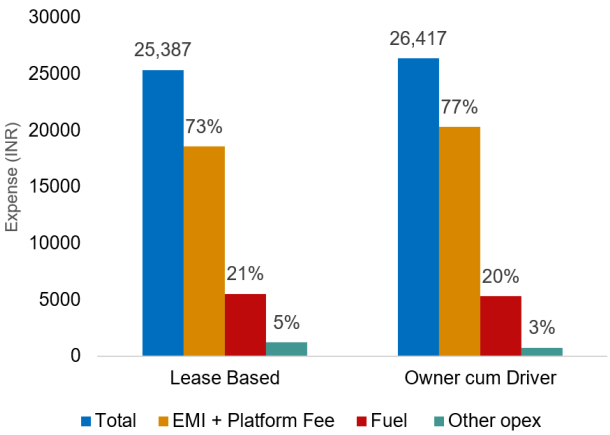


Figure: Monthly EV Operating Expense Split across

Viability Gap: Difference Between fixed-cost Financing and variable Driver Revenues

A fundamental constraint to scaling EV adoption lies in the **mismatch between financing structures and the realities of driver income.**

While EV financing are structured around fixed monthly repayments (EMIs), while driver earnings fluctuate with trip availability and vehicle utilization. As illustrated in the figure, the ability to manage this gap depends not only on financing structures but also on the operating environment, which influences income stability, repayment capacity, and overall financial risk.

Infrastructure and Service Ecosystem Gaps

Operational barriers continue to influence driver confidence in EV adoption. As illustrated in the figure, limited public charging infrastructure, long waiting times at charging stations, and inadequate local repair and maintenance services remain the most significant constraints. Although the ecosystem is steadily maturing, these gaps continue to affect operational efficiency and vehicle utilization.

Bridging this gap will require financing and ecosystem solutions that reduce driver risk while strengthening charging infrastructure, maintenance networks, and service support.

Structured Operating	Independent Operating
More predictable trips | Greater income visibility | Higher, more stable utilization	Demand uncertainty | Irregular earnings | Greater exposure to repayment stress

Figure: Operating Environments and Financing Viability

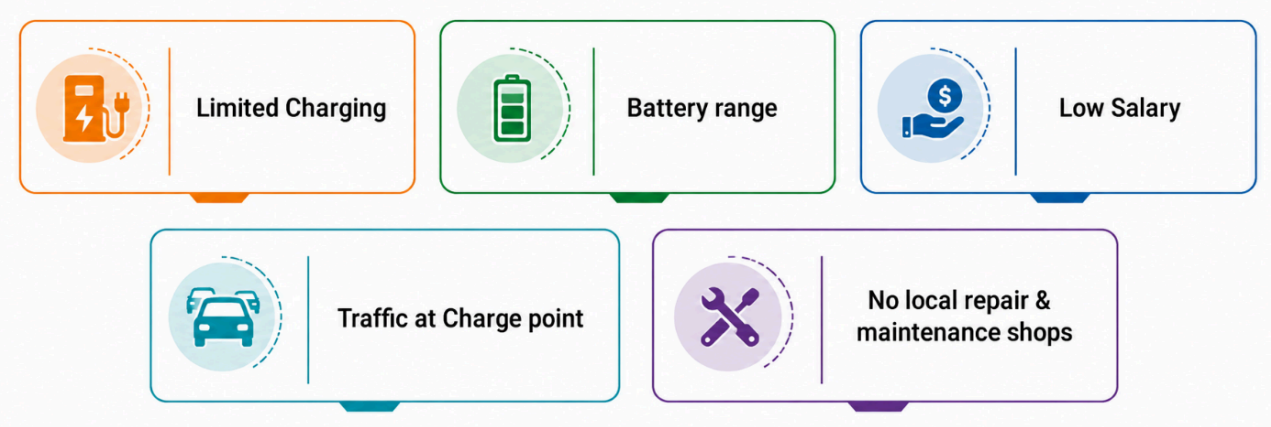


Figure: Driver Feedback on EV Adoption Barriers

2.5 Purpose and Scope of the Study

This study was undertaken to build a comprehensive, evidence-based understanding of how the transition to electric vehicles (EVs) is impacting freight driver livelihoods in India—and what it will take to scale these benefits inclusively.

The objective is twofold:

- **Assess** the economic impact of EV adoption at the driver level
- **Identify** financing and operating models that enable sustainable and scalable adoption

While freight electrification is gaining momentum, limited evidence exists on how this transition affects driver livelihoods. This study addresses that gap by examining driver income, operating costs and financing constraints to identify practical pathways for designing inclusive EV financing models. The findings aim to support financiers, mobility platforms, policymakers and development partners in accelerating EV adoption while strengthening driver livelihoods.

Scope of Analysis

The study draws on a large and diverse sample of freight drivers across multiple geographies, 3W & 4W segments and operating models in India.

This broad coverage reflects a wide range of geographic contexts, operating conditions and market structures across India's freight ecosystem. The Research Sample Overview and Selected Respondent Characteristics presented below provide context on the composition of the study sample, establishing a robust foundation for the analysis of driver livelihoods, financing models and operating structures in this report.

Research At a Glance

Parameter	Coverage
Drivers Surveyed	**1,500+**
States Covered	**11 (PB, HRY, DL, Bihar, KA, MH, TG, WB, MP, UP)**
Vehicle Segments	**Three-wheeler (3W) and Four-wheeler (4W)**
Driver Archetypes	**Salary-based, Lease-based, Owner-cum-driver**
Sampling Approach	**Purposive sampling through mobility platforms and logistics operators**
Survey Method	**Structured questionnaire administered through field investigators**

Survey Respondent Characteristics

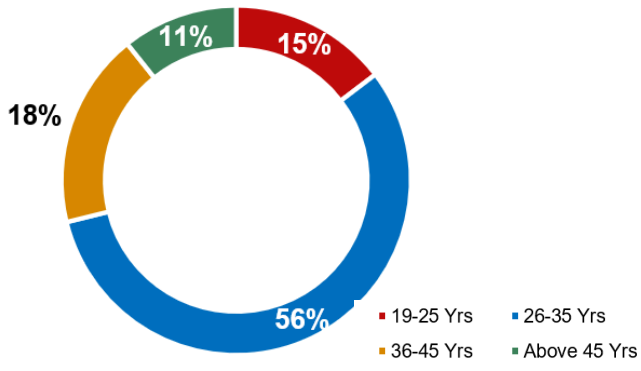


Figure: Driver Age split

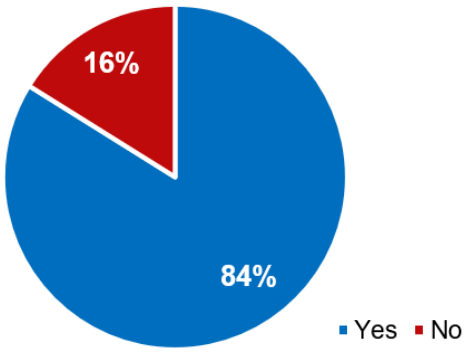


Figure: Secondary Income Source

Capturing the Diversity of Driver Models

Freight drivers operate under diverse employment and ownership arrangements, each associated with different income streams, financing needs and livelihood outcomes.To reflect the heterogeneity of the freight ecosystem, the study analyzes drivers across three primary archetypes:

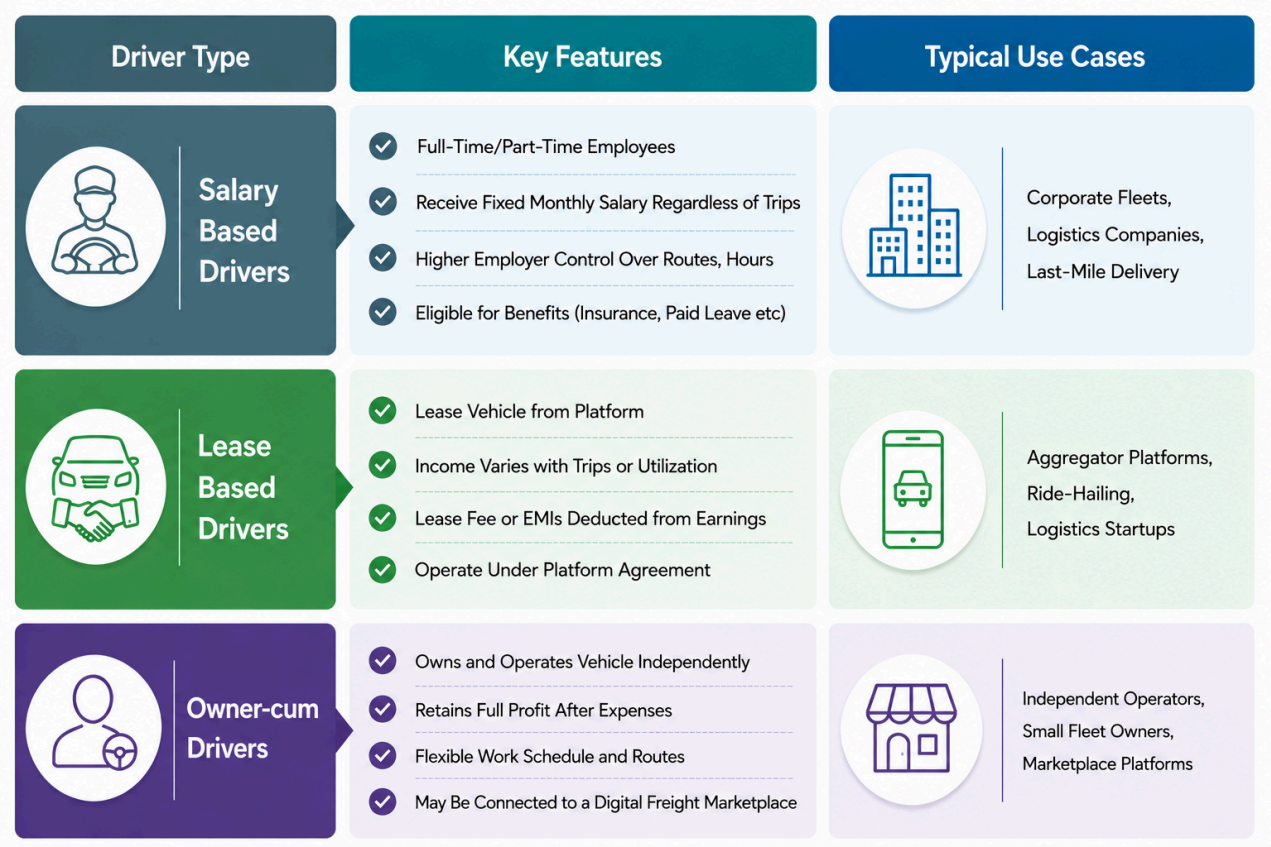


Figure: Driver Feedback on EV Adoption Barriers

Profile of Surveyed Drivers

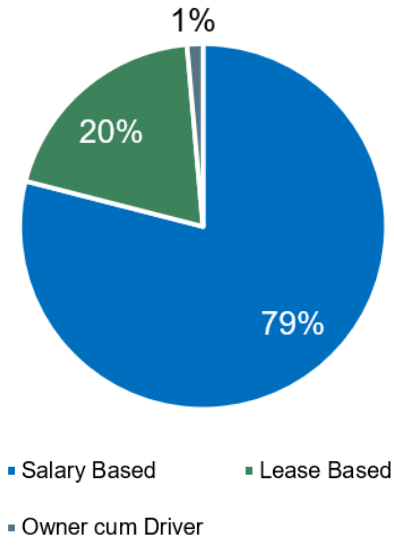


Figure: Driver by Archetype

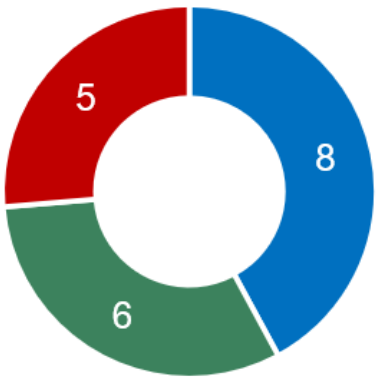


Figure: Avg Years of Driving Experience (Truck – ICE, EV or CNG)

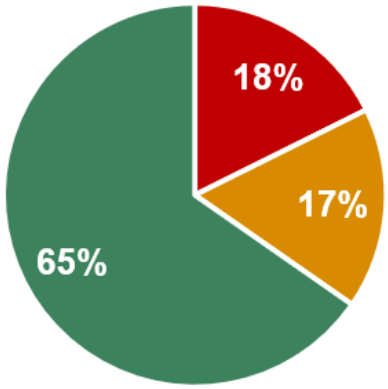


Figure: % Driver Gaining Vehicle Ownership (Lease-Based Model)

Methodological Approach

The study adopts a mixed-methods approach, combining quantitative and qualitative research to examine freight driver livelihoods across different operating models. Primary data collected through structured driver surveys is complemented by focus group discussions and stakeholder consultations to provide a comprehensive understanding of driver experiences and ecosystem dynamics. Figure below summarises the research workflow, while the subsequent tables outline the key data collection methods used in the study.

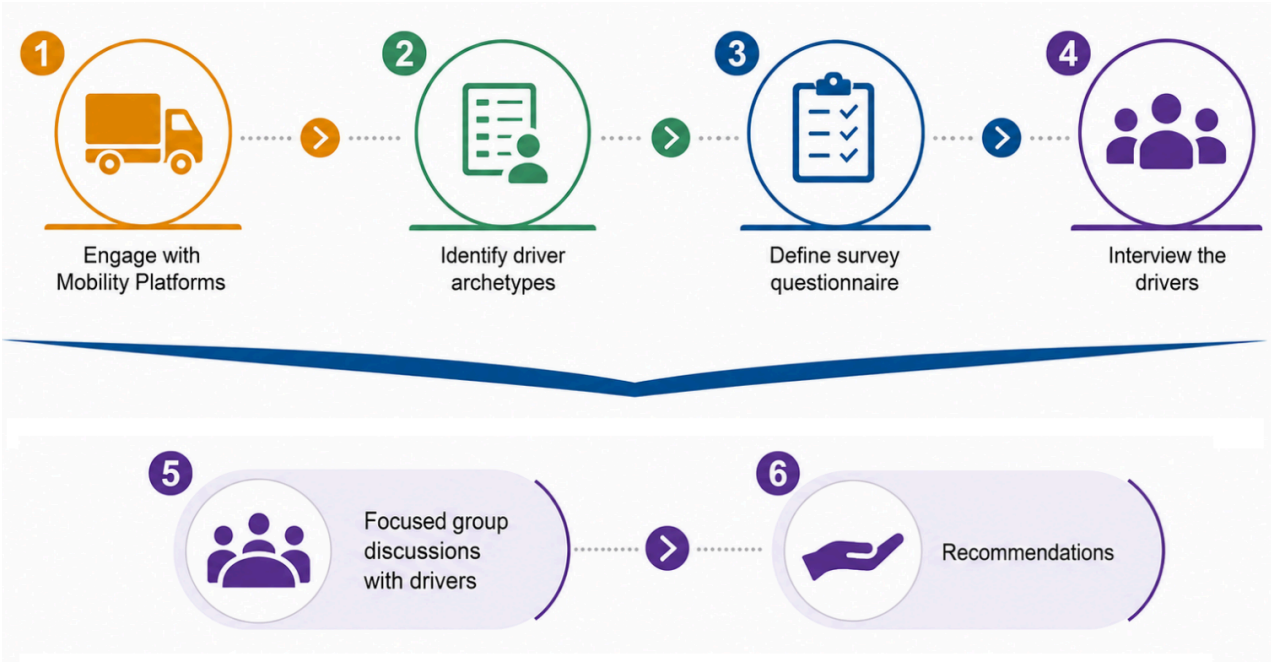


Figure: Methodological Approach

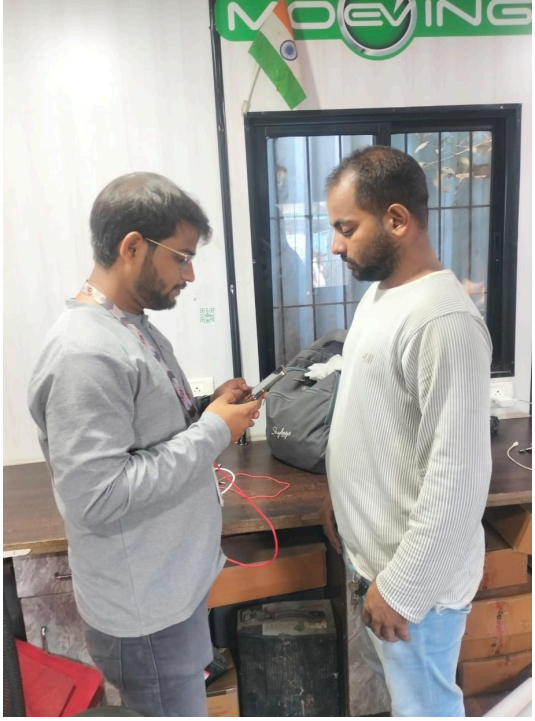
Data Collection Methods

Data Source	Purpose
Structured Driver Survey	Capture income, operating costs, financing patterns and utilization
Focus Group Discussions	Understand behavioural insights and lived experiences
Engagement with Mobility Platforms & Logistics Operators	Validate business models and operational practices

Key Insight

EVs fundamentally improve the unit economics of freight operations but their success depends on how financing, utilization, and ecosystem support are structured around the driver.









Voices From the Field









3

Inside the Study: Data, Drivers, and Approach



3. Inside the Study: Data, Drivers, and Approach

This study was designed to build a robust, ground-level evidence base on how electric vehicle (EV) adoption is shaping freight driver livelihoods in India.

Given the diversity and fragmentation of the freight ecosystem, the approach combines large-scale data collection with targeted stakeholder engagement to capture both quantitative trends and lived experiences.

3.1 Study Design and Methodology

The study follows a structured three-step approach:

- **Define**

Establish the scope of the study by identifying key driver segments, geographies, and survey parameters.

- **Evaluate**

Collect and analyze data on income, cost structures, utilization patterns, and financing conditions across driver archetypes.

- **Align**

Translate findings into actionable insights through engagement with financial institutions, platforms, and ecosystem stakeholders.

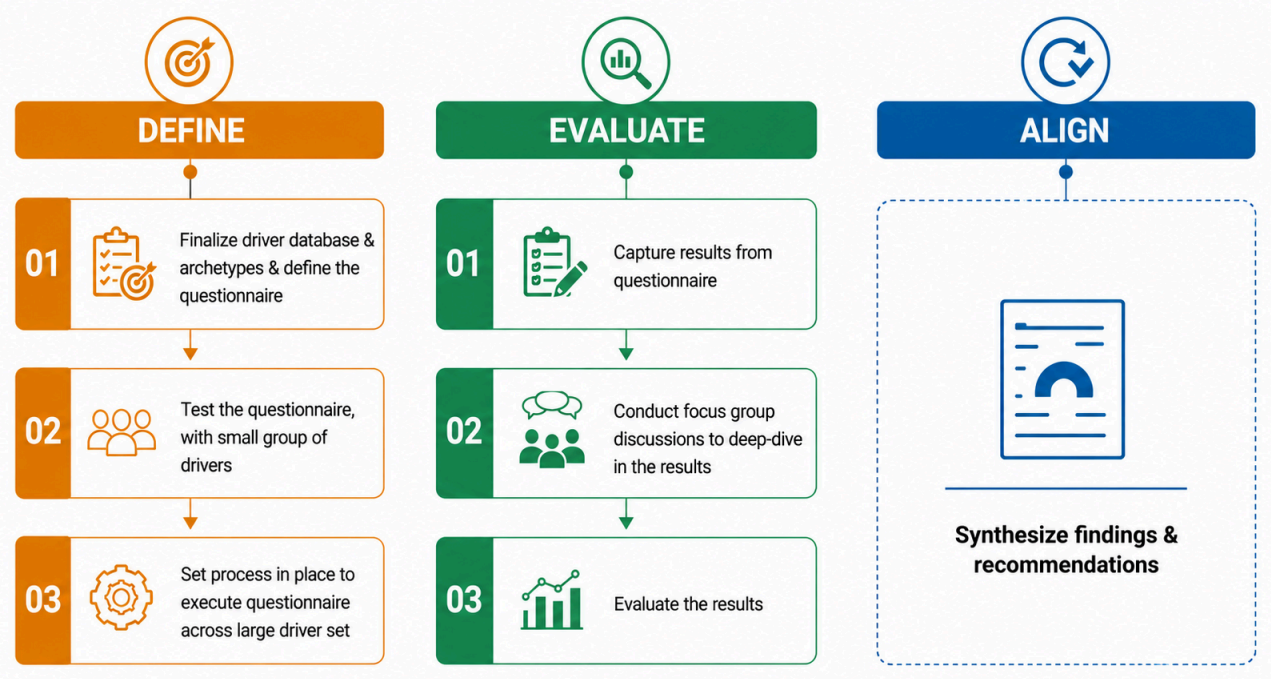


Figure: Study Design and Methodology

Why You Can Trust These Findings

This report is grounded in one of India's most comprehensive primary studies of freight driver livelihoods. We combine large-scale surveys, qualitative insights and ecosystem engagement to generate robust, evidence-based and actionable insights.

1,500+
Drivers Surveyed
Across urban, peri-urban and rural locations

11
States Covered
Representing diverse geographies and markets

3
Driver Archetypes
Salary-based, Lease-based, Owner-cum-driver

3W & 4W
Freight Segments
Capturing the full spectrum of electric freight operations

Primary Surveys

- Structured questionnaires with 1,500+ drivers
- Face-to-face interviews
- Data on income, costs, utilisation, assets, financing and aspirations
- Standardised tools and quality controls

Qualitative Insights

- Focus Group Discussions with drivers
- In-depth driver interviews Lived experiences on financing, operations and transition
- Understanding barriers and opportunities

Ecosystem Engagement

- Mobility platforms
- Fleet operators
- Financial institutions
- Industry experts
- Policymakers and development partners
- Continuous stakeholder feedback

Our Research & Approach

Research Design	Driver Surveys	FGDs & Interviews	Stakeholder Engagement	Validation & Analysis	Evidence-based Recommendations
Developed robust framework and tools aligned to study objectives	Large-scale primary data collection across 11 states	Deep-dive qualitative insights from drivers across archetypes	Consultations with ecosystem to enrich and validate findings	Rigorous analysis, cross-validation and triangulation	Actionable insights to enable an inclusive EV freight transition

DATA QUALITY & VALIDATION

Mixed-methods approach
Combining quantitative scale with qualitative depth for a holistic understanding.

Cross-validation of findings
Triangulating survey data, qualitative insights and secondary sources.

Comparative robustness
Analysis across driver archetypes, vehicle segments and states to ensure reliability.

Stakeholder review and peer input
Findings reviewed with sector experts to ensure accuracy and relevance.

Together, these insights provide a credible evidence base to inform policies, financing solutions and business models that enable a just and inclusive freight transition in India.

Sampling Design

The study adopted a psampling approach to capture the diversity of India's freight ecosystem across multiple geographies, 3W & 4W segments and driver operating models.

Respondents were selected through mobility platforms and logistics operators to ensure representation across salary-based, lease-based and owner-cum-driver models, as well as drivers operating EV and ICE vehicles enabling comparative analysis of livelihood outcomes and financing patterns.

Survey Implementation

The study adopted a collaborative field research approach to capture quantitative evidence while ensuring that the findings reflected the operational realities of India's freight ecosystem.

Primary data collection was undertaken through structured, face-to-face interviews with freight drivers across the selected study locations using a standardized questionnaire.

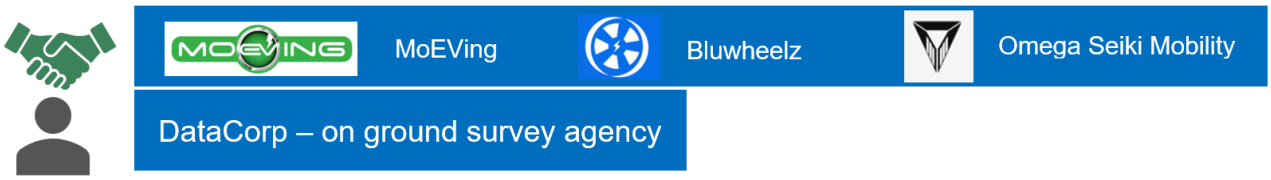
The questionnaire was designed to collect consistent information on driver demographics, employment characteristics, vehicle ownership, income, operating costs, financing arrangements, vehicle utilization and perceptions of EV adoption.

The study also incorporated focus group discussions (FGDs) and in-depth driver interactions to capture qualitative insights into the lived experiences of freight drivers, including operational challenges, financing constraints, vehicle utilization patterns, perceptions of electric vehicle adoption and the factors influencing livelihood outcomes.



The study was supported by a network of The research was further strengthened through engagement with key ecosystem stakeholders, including mobility platforms and fleet operators. Organisations such as **MoEVing, BluWheelz and Omega Seiki Mobility** facilitated access to diverse driver networks and contributed operational perspectives on fleet management, utilization dynamics, financing practices and business models.

Field surveys were conducted by DataCorp, the on-ground survey agency, following a common survey protocol to ensure consistency in data collection across geographies.







Data Analysis Approach

The analysis followed a structured, multi-stage approach to examine the economic implications of EV adoption across different driver operating models

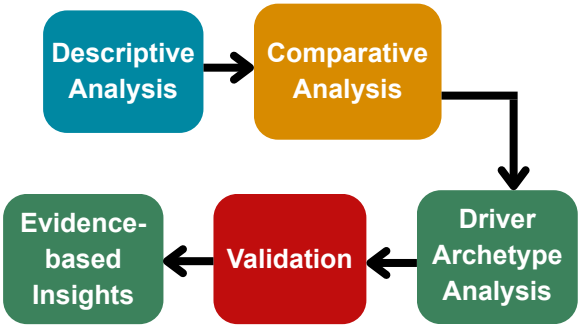


Figure: Data Analysis Approach

Validation and Confidence

Findings presented in this report are cross-validated using multiple evidence sources. Quantitative survey results were validated through focus group discussions and consultations with mobility platforms, logistics operators and financing stakeholders. This multi-source approach improves confidence in the consistency and reliability of the findings.

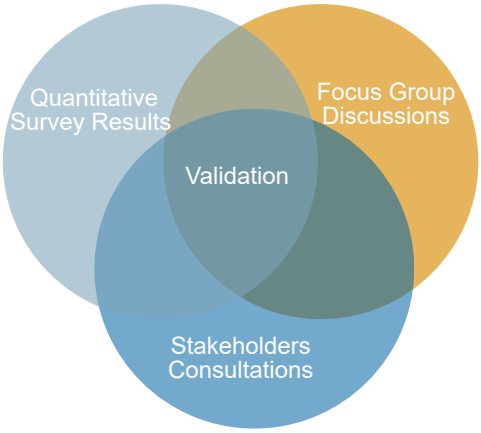


Figure: Cross-Validation Across Data Sources

Analytical Framework

The analysis links driver-level data with operating and financing conditions to assess:

This framework enables the study to move beyond averages and identify what works, for whom, and under what conditions.

Analysis Framework



Income Outcomes

Gross monthly income
Net monthly income
Income performance under current EV operations



Driver Archetypes & Vehicle Segments

Differences between salary-based, lease-based and owner-drivers
Variations across 3W and 4W EV segments
Influence of ownership model and vehicle type on earnings



Vehicle Utilization

Relationship between vehicle utilization and earnings
Utilization patterns across driver archetypes
Operational intensity and income generation



Financing Structures

Financing models and repayment obligations
Impact on drivers' net income
Retention of EV economic benefits

Key Insight

Understanding EV adoption requires linking technology, utilization and financing at the driver level rather than in isolation.

4

Business Models and Their Impact on Driver Income in the EV Transition



4. Business Models and Their Impact on Driver Income in the EV Transition

While EV adoption improves the underlying economics of freight operations, the analysis shows that income outcomes are not determined by technology alone. Instead, they are shaped by how vehicles are deployed, operated, and integrated into the freight ecosystem.
Across the study, one pattern is clear: Business models—not vehicle technology alone—determine whether drivers benefit from EV adoption.

4.1 Comparing Operating Models

Freight drivers operate under different models that define how income is earned, how costs are structured, and how risk is distributed.

- **Salary-based model**

Drivers earn a fixed monthly wage from a fleet or logistics company. It offers strong financial security and low risk, but caps earning potential.

- **Lease-based model**

Drivers operate vehicles through platform-linked lease agreements, with income tied to utilization and repayments deducted from earnings.

- **Ownership model (owner-cum-driver)**

Drivers own and operate their vehicles independently, retaining full profits but also bearing full exposure to financing, utilization, and operational risks.

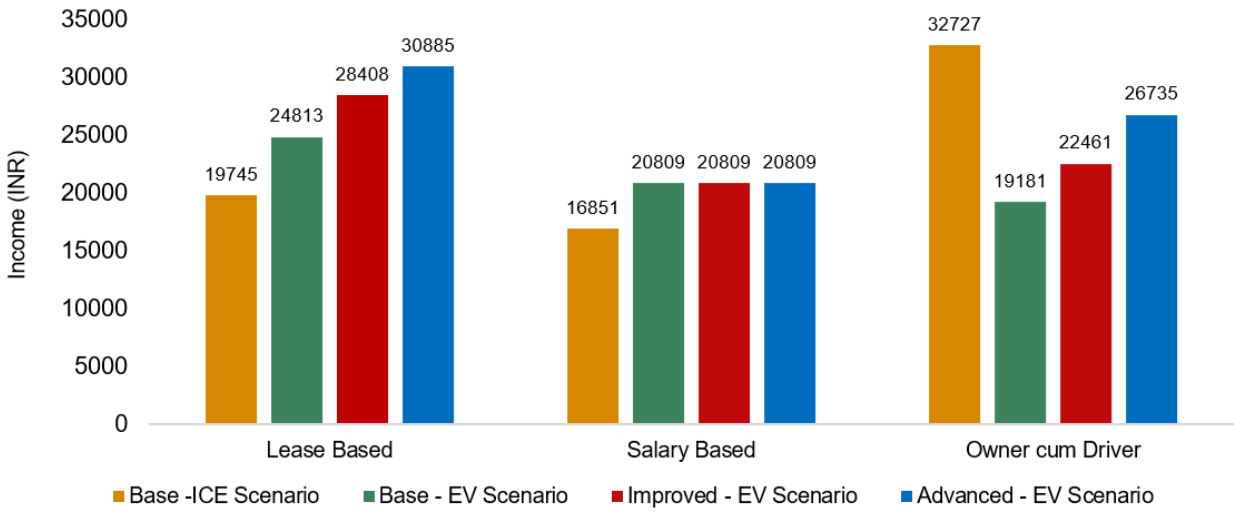


Figure: Net Average income across Scenarios (INR)

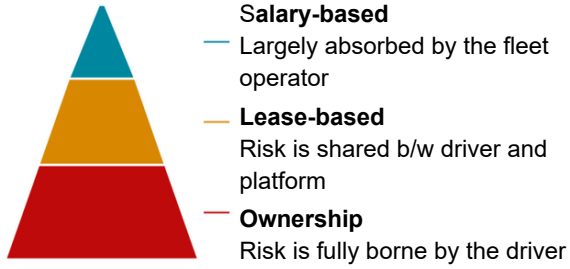
Each model creates a different balance between **income stability, risk exposure, and long-term earning potential.**

4.2 The Role of Utilization and Demand Aggregation

A key advantage of structured models—particularly lease-based systems—is **access to consistent demand.**

Platform-linked drivers	Guaranteed or semi-guaranteed trip volumes | higher daily utilization | reduced idle time | greater income predictability
Independent drivers	Source trips independently | Manage demand uncertainty | Absorb the impact of downtime

Another key differentiator is how financial and operational risks are distributed risk borne by the driver, as illustrated in the figure.



For EV adoption, this distinction becomes critical. Because EVs rely on financing and utilization to deliver economic benefits, models where risk is shared or supported tend to perform significantly better.

4.3 Income Outcomes of EV Adoption

EV adoption is already improving freight driver incomes in India. However, the extent of this improvement varies significantly depending on how vehicles are operated, financed, and utilized.

Income Uplift: EVs vs. ICE Vehicles

The findings demonstrate clear income gains for drivers transitioning from conventional ICE operations to electric freight.

Under current operating conditions, both 3-wheeler and 4-wheeler EV drivers earn higher monthly incomes than their pre-EV occupations. These gains are primarily driven by lower operating costs, particularly reduced fuel and maintenance expenses.

~25%

HIGHER DRIVER INCOME

Drivers transitioning to EV operations report higher income compared to their previous professions.

3W EV Drivers	**Rs. 4,000–8,000** more per month vs. pre-EV income

Salary & Lease-Based Drivers

4W EV Drivers	**~Rs. 4,000** more per month vs. pre-EV income

Highest Uplift Among Salary- and Lease-Based Drivers

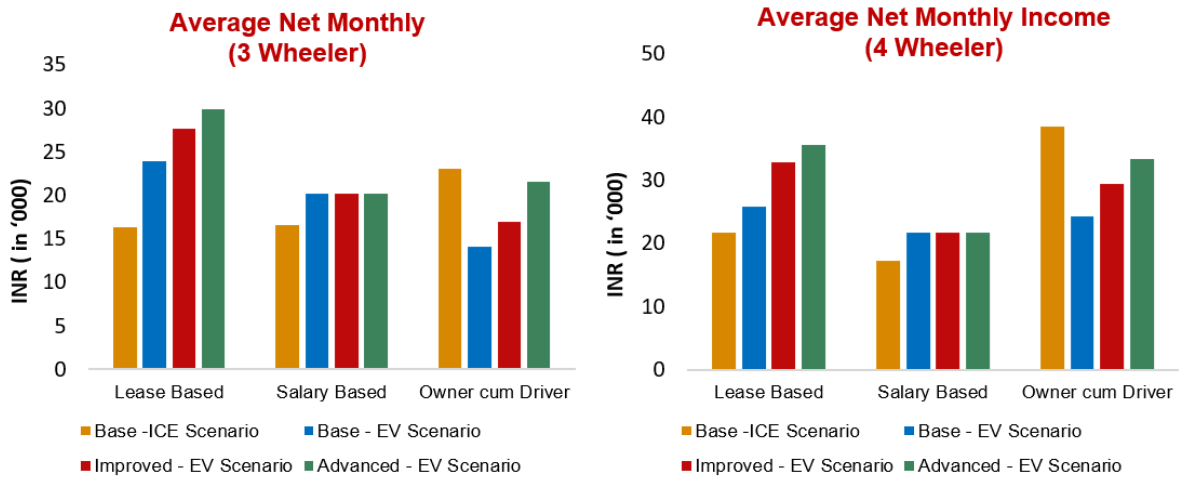


Figure: Net Income Comparison Across Driver Scenarios (ICE vs EV)
Vehicle operational life ~ 10 years, with battery replacement at end of 5th Year

Unlike ICE vehicles, where fuel costs erode a significant portion of daily earnings, EVs allow drivers to retain a larger share of their income provided utilization remains stable.

Income Outcomes Across Driver Archetypes

While overall income trends are positive, outcomes differ significantly across driver archetypes as illustrated in the figure.

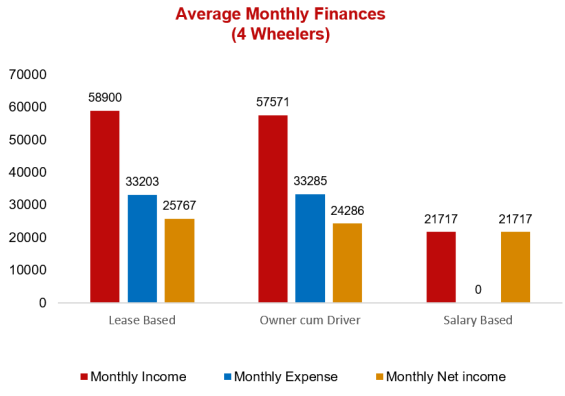
Lease-based	Strongest performance — high utilisation, predictable platform-linked demand.
Salary-based	Stable income, improved conditions — limited upside from fixed pay.
Owner-cum-driver	Most complex transition — financing burden and lower utilization can limit gains.

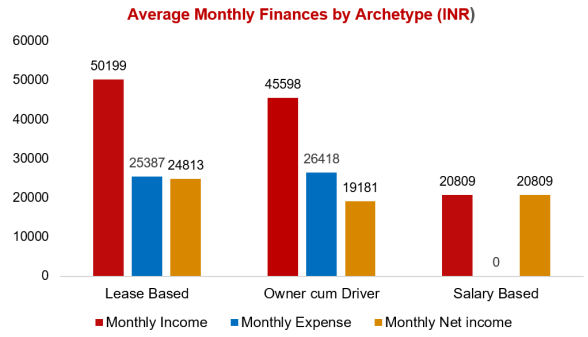
Figure: Income Outcomes Across Driver Archetypes

Differences Across 3W and 4W Segments

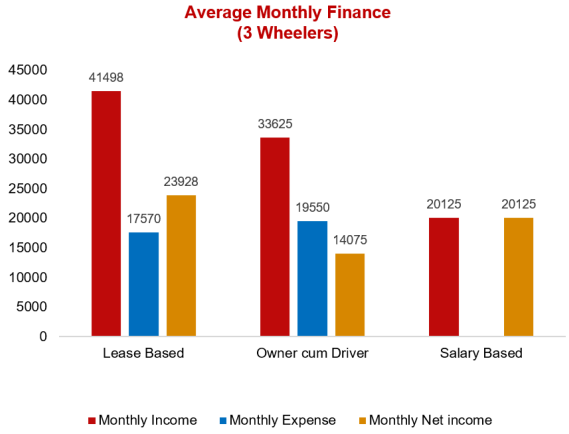
The impact of EV adoption also varies across vehicle segments illustrated below.

3-Wheelers	Lower vehicle cost + shorter cycles → faster income gains, lower financing pressure.
4-Wheelers	Bigger operating savings, but higher vehicle cost raises financing dependence and sensitivity to loan terms.





These differences highlight that EV adoption does not create uniform outcomes. Financial performance depends heavily on how drivers are integrated into the operating ecosystem.



This suggests that while EVs are viable across segments, financing design becomes increasingly critical as vehicle size and cost increase.

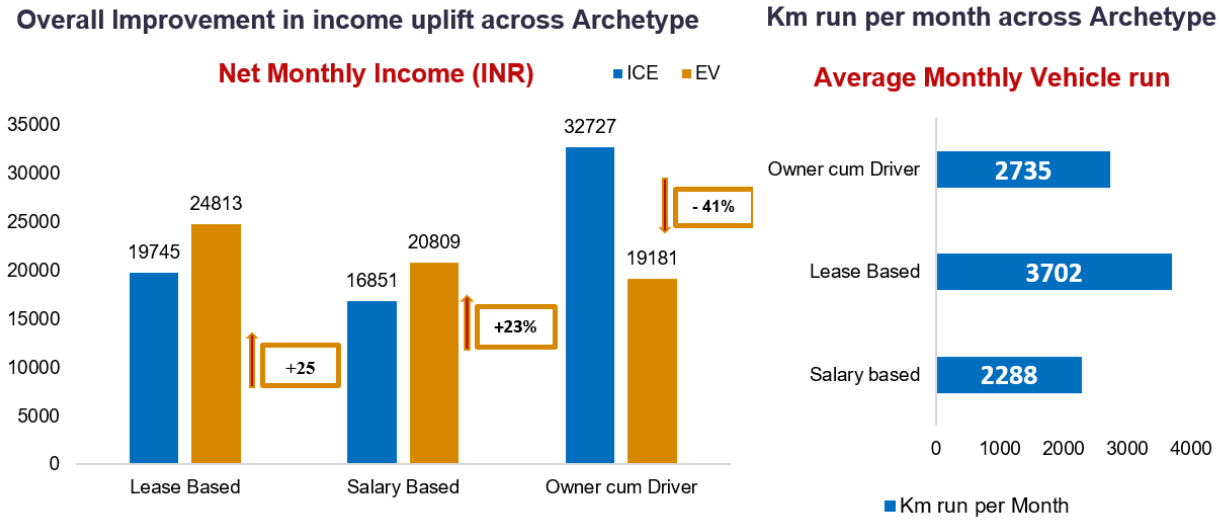


Figure: Net Income Uplift: ICE vs. EV, Base Scenario with As-Is condition

The Financing Effect on Income

Despite lower operating costs, EV income outcomes are significantly influenced by financing structures.

- **Loan repayments (EMIs)** are the largest cost component across both 3W and 4W segments.
- Independent drivers often face **higher interest rates and shorter tenures.**
- This results in **higher repayment burdens**, especially in early years.

For owner-cum-drivers, this can offset the cost advantages of EVs and limit net income gains.

Key Insight

EV technology already enables higher driver income but financing structures and utilization determine who benefits from that opportunity.

5

Designing Models That Work for Drivers



5. Designing Models That Work for Drivers

The findings from this study make one point clear: **electric vehicles (EVs) can improve driver income, but only when supported by financing structures and operating models that reduce financial risk, improve affordability and support sustainable earnings.**

Scaling EV adoption in freight therefore requires moving beyond traditional ownership structures toward **models that align with driver income patterns, reduce upfront barriers, and distribute risk more effectively across the ecosystem.**

5.1 Platform-Backed Lease Models

Platform-backed lease models demonstrate how structured financing can reduce entry barriers and provide a scalable pathway for accelerating EV adoption across India's freight ecosystem. By combining vehicle access, predictable trip demand and repayments linked to driver earnings, these models deliver the most stable income outcomes observed in the study.

However, while they improve short-term financial stability, they do not create a pathway to asset ownership, leaving drivers dependent on platform structures and limiting long-term wealth creation.

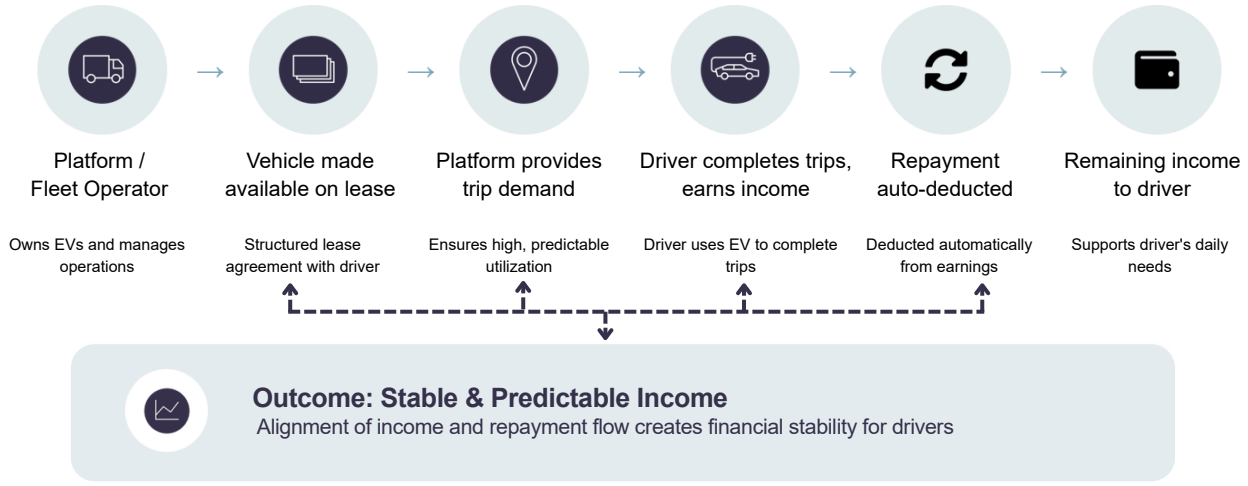


Figure: How Platform-Backed Lease Models Works

Traditional Loan (Baseline ICE)	Platform-Backed Lease (Base EV Scenario)	Lease-to-Own with De-Risking (Advanced EV Scenario)	Anchor/Platform-Linked Credit
• High interest NBFC or informal loans • Short tenures leading to high EMI burden • No structures pathway to ownership security • High default risk for low-income	• Platform provides or intermediates EV lease • Lower operating costs benefit passed to drivers • No asset ownership at end of tenure • Driver remain dependent on the platform for work/earnings	• Blended finance + partial guarantee lowers cost of capital • Structured repayments over 4-5 years driver becomes owner • Battery leasing or residual value guarantees reduce technology risk	• Financing tied to platform/shipper contracts • Repayments deducted from freight earnings • Builds alternative credit score using verified trip and income data • Scalable for large platform fleets across corridors

Figure: Financing & Ownership Models: Inclusive Pathways for Driver-Centric EV Adoption

5.2 Lease-to-Own Models: Enabling Pathways to Ownership

Lease-to-own models build on the operational strengths of platform-backed leasing while addressing its key limitation—the lack of vehicle ownership. They provide drivers with a structured pathway to asset ownership without requiring significant upfront capital.

Drivers initially lease the vehicle under predictable earning arrangements, with repayments progressively building equity over time. This model lowers entry barriers while creating a practical pathway to ownership.

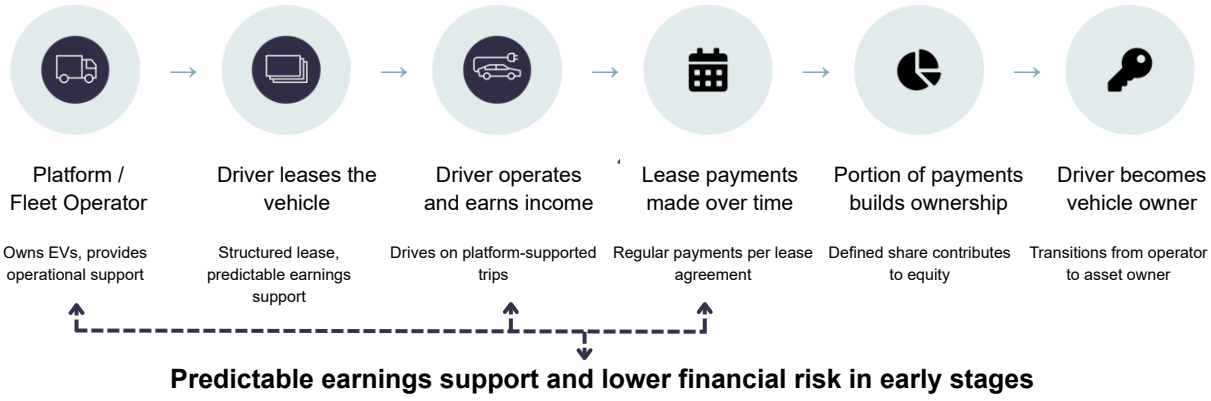


Figure: How Lease-to-Own Models Works

The lease-to-own journey demonstrates how structured financing creates value over time. As drivers progress through the repayment cycle, they build credit history, increase equity and ultimately acquire a productive asset.

Beyond ownership, the model improves long-term earning potential and financial resilience, creating a sustainable pathway for inclusive electric freight adoption.

Lease-to-Own: Pathway Toward Asset Ownership and Income Stability

Year 0-1	Year 2-3	Year 4-5	Year 5+
• Driver signs **de-risked lease contract** with low upfront requirement • Monthly instalment = vehicle + battery + insurance • Platform ensures predictable earnings in early months	• Repayments linked to confirmed trip income • Driver builds formal credit history • Incentive for high utilization & on-time payments • Repayments linked to	• Completion of tenure → **driver owns the vehicle outright** • Lower operating costs after lease ends • Option to continue battery lease or platform services	• Driver retains platform access without lease-fee deductions • Higher net monthly income and full control of asset • Vehicle becomes an economic asset for future loans or upgrades

5.3 Anchor-Linked Financing Models

A third emerging approach links vehicle financing directly to freight demand through anchor platforms or shippers. As illustrated in the figure, this model shifts financing from traditional asset-based lending to cash flow-based lending, improving income visibility for drivers while reducing risk for lenders.

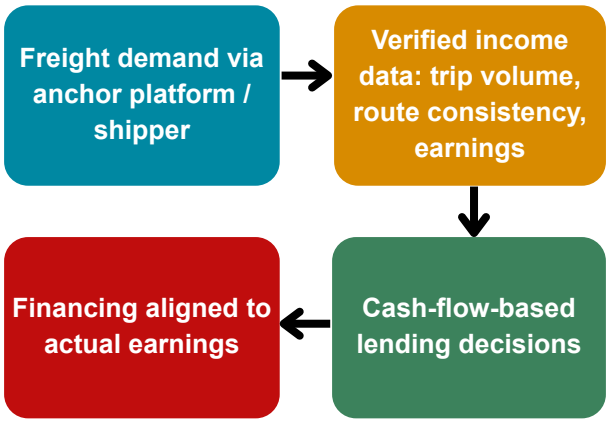


Figure: Anchor-Linked Financing: From Freight Demand to Credit

5.4 Enabling Financial Mechanisms

In addition to business model innovation, targeted financial instruments can play a critical role in improving affordability and reducing risk across the ecosystem. These mechanisms are especially important in early-stage markets, where uncertainty around technology performance and borrower profiles remains high.

The mechanisms shown in the figure below are particularly relevant for improving affordability and reducing risk.

In practice, this approach enables:

- **Repayments that are aligned with actual earnings**
- **Credit assessment mechanisms based on platform data**
- **Reduced due to predictable utilization**

This model is particularly relevant for drivers who are otherwise excluded from formal credit systems, as it bridges the gap between informal income structures and formal financing requirements.

Key Insight

Scaling EV adoption requires financial innovation that aligns capital with driver livelihoods not just vehicle deployment.

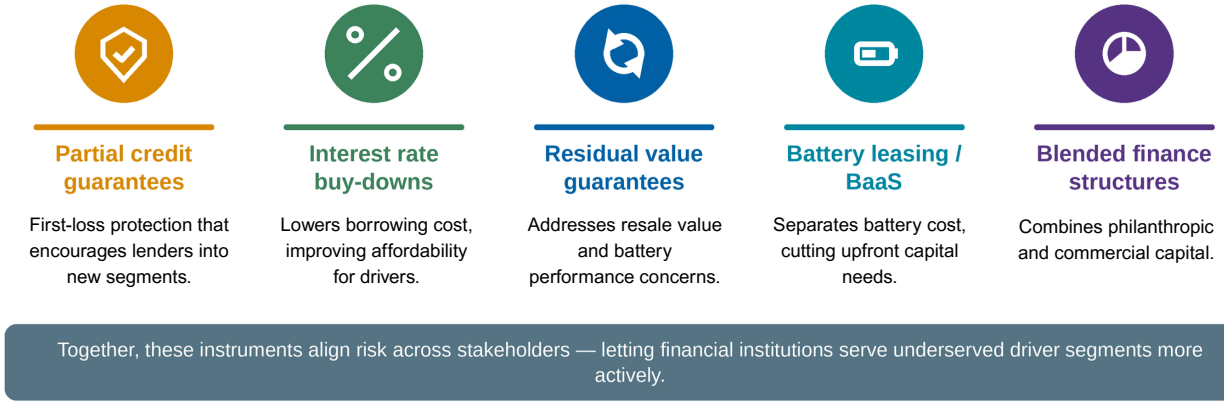


Figure: Key Financial Mechanisms Enabling Ecosystem Development

6

From Evidence to Scale: Building an Inclusive EV Ecosystem



6. From Evidence to Scale: Building an Inclusive EV Ecosystem

The findings from this study provide clear evidence that electric freight vehicles can improve driver livelihoods while supporting India's broader decarbonization goals. However, translating this potential into large-scale adoption requires moving beyond isolated pilots toward **system-wide alignment across stakeholders.**

The transition to EVs is not only a technological shift. It is a **coordinated ecosystem transformation** involving financing structures, operating models, infrastructure, and policy support. Scaling this transition will depend on how effectively these elements are aligned to support both **economic viability and inclusivity.**

6.1 The Role of Financial Institutions

Financial institutions will play a central role in determining the pace and inclusivity of EV adoption. The study highlights the need to move away from conventional lending models toward approaches that better reflect driver income patterns and operational realities.
This requires a shift toward:

- Designing loan products tailored to different driver archetypes
- Extending loan tenures to reduce monthly repayment burdens
- Incorporating alternative credit assessment methods based on utilization and earnings data
- Piloting blended finance and credit enhancement mechanisms to reduce perceived risk

As EV adoption scales, financial institutions have an opportunity to move from cautious participation to active market enablers, unlocking access to capital for a broader base of drivers.

6.2 The Role of Platforms and Fleet Operators

Mobility platforms and logistics operators are critical in shaping utilization and income stability—two of the most important drivers of EV viability.
By aggregating demand and structuring operations, platforms can:

- Ensure consistent trip volumes and higher utilization
- Provide income visibility through verified operational data
- Enable repayment mechanisms linked to earnings
- Support driver onboarding and training for EV operations

In doing so, platforms act as a bridge between drivers and financiers, reducing uncertainty on both sides and enabling more scalable deployment models.

6.3 The Role of Philanthropy and Blended Finance

In the early stages of market development, philanthropic and development capital can play a catalytic role in addressing structural barriers and unlocking private investment.

Targeted interventions can include:

- First-loss capital to de-risk lending portfolios
- Interest rate support mechanisms to improve affordability
- Pilot funding to test innovative financing and ownership models
- Support for ecosystem coordination and capacity building

These interventions are particularly important in segments where perceived risk remains high, helping to accelerate market maturation and crowd in commercial capital over time.

6.4 The Role of Policy and Ecosystem Enablers

Policy frameworks will be essential in creating an enabling environment for EV adoption at scale. While progress has been made through incentives and demand-side programs, the next phase requires a more integrated approach.

Key priorities include:

- Supporting financing innovation through credit enhancement mechanisms
- Strengthening charging infrastructure and grid readiness

- Enabling data sharing frameworks to support alternative credit models
- Promoting standardization and transparency in EV performance and costs

By aligning policy with financing and operational realities, governments can help reduce systemic barriers and accelerate adoption across segments.

6.5 Conclusion: Enabling a Just Transition for Freight Drivers

The transition to electric freight presents a significant opportunity to advance both climate objectives and inclusive economic growth. The findings of this study show that while EVs can improve driver livelihoods, realizing these benefits at scale requires financing models, operating structures, and ecosystem support that enable drivers to participate in the transition.

Financing is more than a mechanism for vehicle ownership. It is the foundation for building a cleaner, more resilient and more inclusive freight ecosystem.

Roadmap for an Inclusive EV Freight Transition

Turning evidence into impact requires coordinated action. The roadmap below outlines the priority actions for key stakeholders to accelerate an inclusive EV freight transition.

Stakeholder	Immediate Action	Why It Matters
Government	Strengthen financing support mechanisms through credit guarantees, interest subvention, and enabling policy frameworks.	Expands access to affordable EV finance and accelerates market adoption.
Banks & NBFCs	Driver-centric lending models — tailored loan products, longer tenures, alternative credit assessment	Expands access to affordable finance while reducing lending risk.
Platforms & Fleet operators	Aggregate demand, improve income visibility, and increase vehicle utilization through structured operating models.	Increases utilization, income stability, and repayment capacity.
OEMs	Scale lease-to-own and flexible ownership models linked to platform utilization data and driver cash flows.	Lower upfront costs and expand pathways to sustainable asset ownership.
Development partners	Pilot blended finance solutions, provide technical assistance, and generate evidence for scalable financing models	De-risks innovative financing and mobilises commercial capital.

Key Insight

A successful EV transition is not only about electrifying fleets, it is about enabling drivers to earn sustainably, reduce risk, and build long-term financial security.



ENABLING DRIVERS TRANSFORMING FREIGHT

India's transition to cleaner freight will be successful only if it also improves the lives and livelihoods of the people who keep the economy moving.

By placing drivers at the centre of financing, business model innovation and policy design, India has the opportunity to build a freight ecosystem that is cleaner, more resilient and more inclusive.

> A just transition is not measured by the number of electric vehicles on the road, but by the opportunities created for the people who drive them.

How can you accelerate your decarbonization journey?

Read More
www.smartfreightcentre.org

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Driving Income Uplift:

Designing Inclusive EV Financing for India's Freight Drivers

Smart Freight Centre

Shell Foundation