


Chapter 10

Economic Growth Study and Inferences From Developments in E–Mobility


Sharada Prasad N.

*Department of Electrical and Electronics
Engineering, RNS Institute of Technology,
Bangalore, India*


Chandravadan Goritiyal

 <https://orcid.org/0000-0001-5022-8589>
*Department of Operations, Prin. L.N. Welingkar
Institute of Management Development and
Research, Mumbai, India*


Nagella Venkata Ramana

 <https://orcid.org/0000-0003-1249-7109>
*Department of Management Studies,
Madanapalle Institute of Technology and
Science, Madanapalle, India*

Ashok Matcha

 <https://orcid.org/0009-0004-2203-6298>
International Institute of Business Studies

P. Sukania

 <https://orcid.org/0000-0001-6555-2509>
*Department of Mathematics, R.M.K. Engineering
College, Chennai, India*

S. Boopathi

*Mechanical Engineering, Muthayammal
Engineering College, Namakkal, India*

ABSTRACT

The e-mobility transition is a significant shift in transportation due to technological advancements, environmental concerns, and changing consumer preferences. This chapter analyzes the opportunities, challenges, and policy implications of e-mobility, focusing on its potential to drive economic growth and sustainability. Key themes include job creation, industrial innovation, infrastructure development, reduced fuel costs, increased productivity, and enhanced competitiveness. The investment landscape is examined, with private sector investments, funding trends, and venture capital activity. Market analysis, consumer trends, and regulatory frameworks are discussed, along with challenges like infrastructure deployment and adoption barriers. Future trends include increased electrification, charging infrastructure expansion, and integration with renewable energy sources. Policy recommendations emphasize investment, regulatory support, and skills development.

DOI: 10.4018/979-8-3693-5247-2.ch010

INTRODUCTION

E-mobility, or electric mobility, refers to the use of electric vehicles (EVs) for transportation, including cars, buses, trucks, scooters, and bicycles. This concept has gained popularity due to its potential to address challenges like environmental pollution, energy security, and resource depletion. E-mobility represents a shift towards cleaner, more sustainable transportation solutions, reducing greenhouse gas emissions and mitigating air pollution's harmful effects on public health and the environment. Electric vehicles produce zero tailpipe emissions, making them an attractive option for addressing climate change and improving urban air quality, unlike conventional vehicles that rely on fossil fuels (Ulrich & Lehr, 2020).

E-mobility offers socio-economic benefits beyond environmental concerns, such as reducing dependence on imported oil and enhancing energy security. It diversifies transportation energy sources, reducing vulnerability to global oil price fluctuations and geopolitical tensions. E-mobility also presents opportunities for innovation and economic growth across sectors, as technological advancements in battery technology, electric drivetrains, and charging infrastructure drive improvements in performance and affordability. This creates new opportunities for businesses and entrepreneurs to enter emerging markets, promoting economic stability and resilience (Leal Filho et al., 2021).

E-mobility, beyond the automotive sector, has significant implications for energy, manufacturing, and urban planning. It can accelerate the transition to low-carbon energy systems by integrating electric vehicles with renewable energy sources like solar and wind power. This also presents opportunities to revitalize domestic manufacturing and create high-quality jobs. From a societal perspective, e-mobility has the potential to transform urban mobility patterns and enhance the quality of life in cities. Electric vehicles produce less noise pollution than their combustion engine counterparts, contributing to quieter and more livable urban environments. Electric bikes and scooters offer sustainable and cost-effective alternatives to traditional transportation, reducing congestion and improving urban mobility (Mopidevi et al., 2022a). However, widespread adoption faces challenges like charging infrastructure availability, range limitations, and environmental impact. Addressing these requires governments, industry stakeholders, and civil society to invest in research, incentivize adoption, and promote sustainable practices throughout the e-mobility value chain. E-mobility is a transformative shift in transportation towards cleaner, sustainable, and economically viable solutions. By embracing electric vehicles and supporting infrastructure and policies, societies can unlock environmental, economic, and social benefits, paving the way for a prosperous future (Knieke et al., 2019). E-mobility, the transition to electric vehicles and associated infrastructure, is crucial for national economies, offering numerous economic benefits and contributing to sustainable growth and development.

- **Job Creation and Economic Stimulus:** The shift towards e-mobility creates employment opportunities across various sectors, including manufacturing, research and development, infrastructure development, and services. As countries invest in the production of electric vehicles, batteries, charging stations, and related technologies, they stimulate economic activity and generate jobs in both urban and rural areas. This influx of employment not only reduces unemployment rates but also boosts consumer spending and overall economic growth.
- **Increased Competitiveness and Innovation:** Embracing e-mobility fosters innovation and enhances the competitiveness of domestic industries. Companies involved in electric vehicle manufacturing, battery production, and related supply chains benefit from technological advancements, economies of scale, and market demand. Moreover, the transition to e-mobility encourages re-

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