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Awareness of Electric Vehicles: A Survey-Based Study of Public Perception and Adoption

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ABSTRACT

Electric vehicles (EVs) are an emerging mode of transportation that use electric motors and rechargeable batteries instead of, or alongside, conventional internal-combustion engines. They can help reduce tailpipe emissions, lower dependence on petrol and diesel, and support the transition towards cleaner transportation. This Community Service Project focuses on awareness of electric vehicles among the people of Kadiri. It is designed to understand residents' knowledge of EVs, their perceived benefits, concerns about cost and battery life, awareness of charging facilities, and willingness to consider using an electric vehicle.

The project uses a simple Yes/No questionnaire and direct interaction with residents. The survey can examine familiarity with electric two-wheelers, cars and other EVs; understanding of charging and maintenance; opinions about purchase cost, driving range and battery replacement; and interest in EV adoption. The survey findings must be completed using answers actually collected from respondents. No response rate or result is assumed in this report.

The study may help identify gaps in public knowledge and concerns that influence EV acceptance. Suggestions can then be developed to improve awareness, explain available charging options, and encourage informed decisions about cleaner transportation.

Keywords: Electric vehicles, EV awareness, electric mobility, charging infrastructure, battery technology, sustainable transportation, public perception, Kadiri.

1. INTRODUCTION

Transportation plays an important role in daily life, but vehicles powered by petrol and diesel produce exhaust emissions and depend on fossil fuels. Electric vehicles are an alternative that use electric motors for propulsion. Depending on the type, an EV may run entirely on electricity or combine an electric motor with a conventional engine.

Electric vehicles include battery electric vehicles (BEVs), which operate using rechargeable batteries, and plug-in hybrid electric vehicles (PHEVs), which use both electricity and another fuel. Electric two-wheelers, three-wheelers, cars, buses and commercial vehicles are among the forms of electric mobility. EV batteries are charged using suitable charging equipment, and the time required depends on the battery, charger and vehicle.

EVs offer potential benefits such as no tailpipe emissions while driving, quieter operation and lower energy or maintenance costs in some circumstances. However, people may have concerns about the initial purchase price, driving range, charging time, availability of charging stations, battery life and the cost of battery replacement. The overall environmental benefit also depends on how electricity is generated and how batteries are manufactured and managed at the end of their useful life.

Public awareness is important for the acceptance of electric mobility. Understanding people's knowledge, expectations and concerns can help identify the information and facilities needed in a community. This paper studies awareness of electric vehicles among residents of Kadiri through a simple questionnaire and direct interaction.

2. OBJECTIVES OF THE STUDY

- To understand residents' awareness of electric vehicles and their main features.
- To identify public knowledge of the benefits and limitations of electric vehicles.
- To examine awareness of EV charging methods, charging stations and battery maintenance.
- To understand people's opinions about the cost, driving range and safety of EVs.
- To assess residents' willingness to use or purchase an electric vehicle in the future.

3. STUDY AREA

The study area for this Community Service Project is Kadiri village. The survey is intended to involve residents from the village and record their awareness, opinions and willingness regarding electric vehicles. Any description of EV ownership, local charging stations, transport facilities or government schemes in the village should be added only after confirmation through observation, interviews or reliable official information.

4. RESEARCH METHODOLOGY

4.1 Type of Study

This is a descriptive community survey. It uses short Yes/No questions to record residents' reported knowledge, opinions and willingness related to electric vehicles.

4.2 Area of Study:

The study area is Kadiri, Andhra Pradesh, India. Exact geographical coordinates may be added after verification from a reliable map or official source.

The geographic coordinates for Kadiri, Sri Sathya Sai district (formerly Anantapur district), Andhra Pradesh, India are:

* Latitude: 14.1175° N (14° 07' 03" N)
* Longitude: 78.1551° E (78° 09' 18" E)

* Elevation: ~504 meters (1,654 feet)



4.3 Data Collection

Primary data should be collected by speaking directly with residents and recording their answers using a structured questionnaire. Questions may cover awareness of EVs, knowledge of charging, perceived advantages and disadvantages, and willingness to adopt an EV. Secondary information may be taken from reliable sources such as the International Energy Agency, Government of India publications and research articles. The source and date of any secondary information should be recorded.



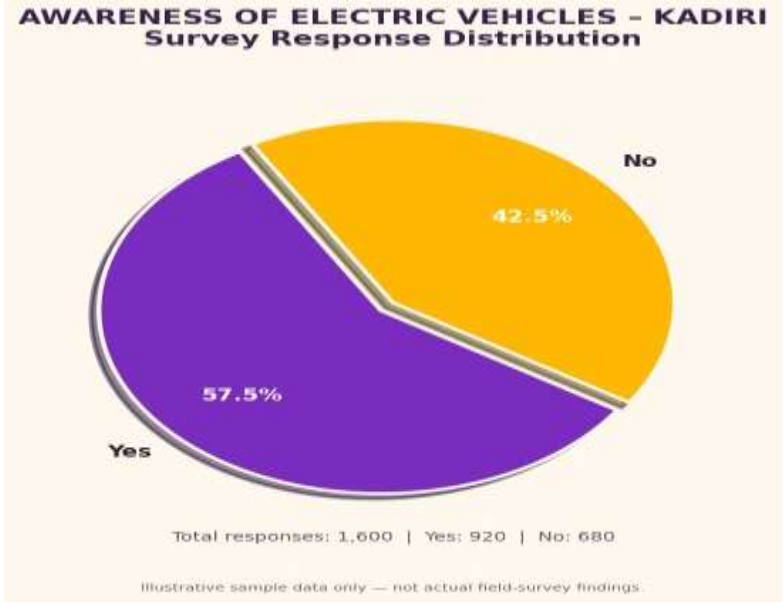




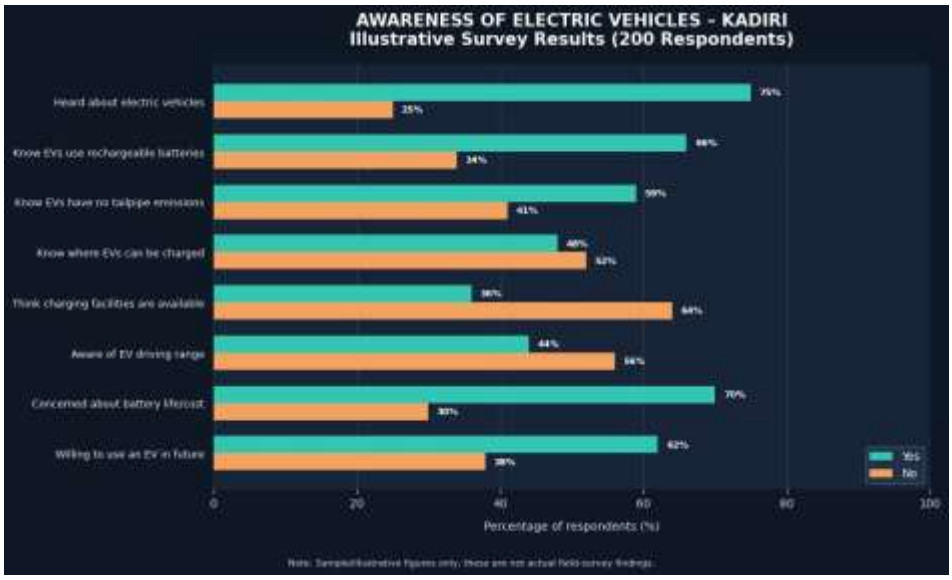


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5.SURVEY ANALYSIS



The pie chart represents the overall distribution of Yes and No responses regarding awareness of electric vehicles among 200 respondents across eight survey questions. Out of 1,600 total responses, 920 (57.5%) were Yes responses and 680 (42.5%) were No responses. This indicates that respondents have a fairly positive level of awareness about electric vehicles. However, the No responses show that some people still lack knowledge about EV technology, charging facilities and battery performance.



The bar graph compares Yes and No responses across eight questions related to electric vehicle awareness. The results show that 75% of respondents have heard about electric vehicles, while 66% know that EVs use rechargeable batteries. Around 59% are aware that EVs produce no tailpipe emissions while driving. However, only 36% believe charging facilities are available in their area, and 44% are aware of EV driving range. These findings highlight the need to improve public awareness about electric vehicles, charging stations and battery technology

6. CONCLUSION

This study is designed to understand public awareness and perceptions of electric vehicles among residents of Kadiri. It focuses on people's familiarity with EV technology, knowledge of charging facilities, understanding of possible benefits, and concerns about purchase cost, driving range and battery life.

The final conclusion should be based on the responses collected from the survey. If the results show limited awareness, awareness programmes and demonstrations may help explain how EVs work and how they can be charged. If respondents express concerns about cost, range or battery replacement, clear and reliable information can help them make informed decisions. The availability of convenient charging facilities may also influence public acceptance.

Overall, the study highlights the importance of public education and suitable infrastructure in supporting electric mobility. Awareness campaigns, access to accurate information and the development of reliable charging facilities can help communities understand the opportunities and challenges associated with electric vehicles.

"Electric mobility can contribute to cleaner transportation when supported by informed users, reliable charging facilities and responsible battery management."

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