

**AVANT GARDE SOLUTION (P) LTD**



**Avant Garde**  
*Delivering Innovative Solutions*

# **Market Promotion of Electric Vehicle**



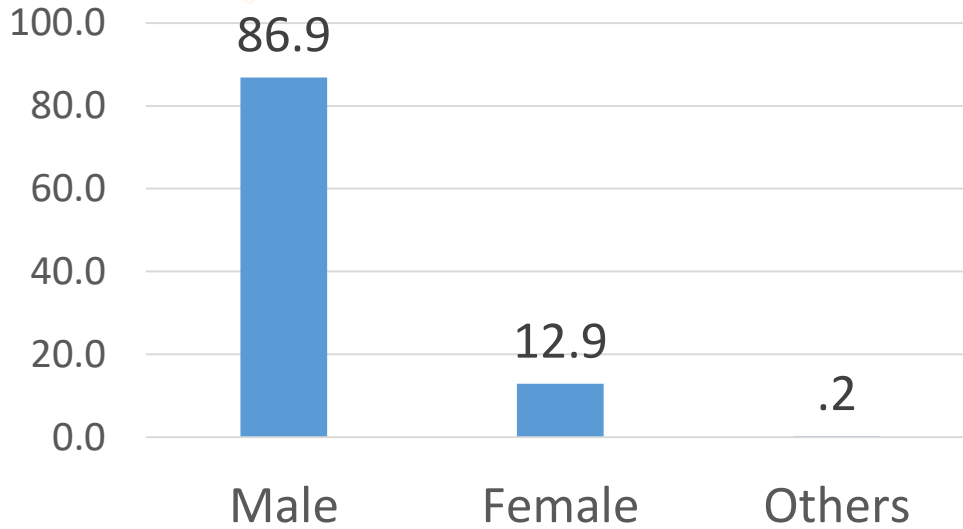
# Introduction

- Electric vehicle are driven by electric motors
- History of more than a decade but inadequate market achievement
- How customers perceive EV?
- What factors affect attitude formation towards EV?
- Are customer intent to adopt?

# How was it studied?

- Quantitative and Qualitative Methods
  - Survey Questionnaire with Non EV users
  - 411 samples (KTM, Bhaktapur, Lalitpur, Banke, Rupandehi)
  - Purposive sampling at central locations
  - Focus Group Discussion (Non EV Users)
  - In depth Interview (EV Users)
  - Key Informants Interview (DOTM , Dealers)
- Frequency Distribution, Descriptive Statistics, Regression, Thematic Analysis of qualitative data

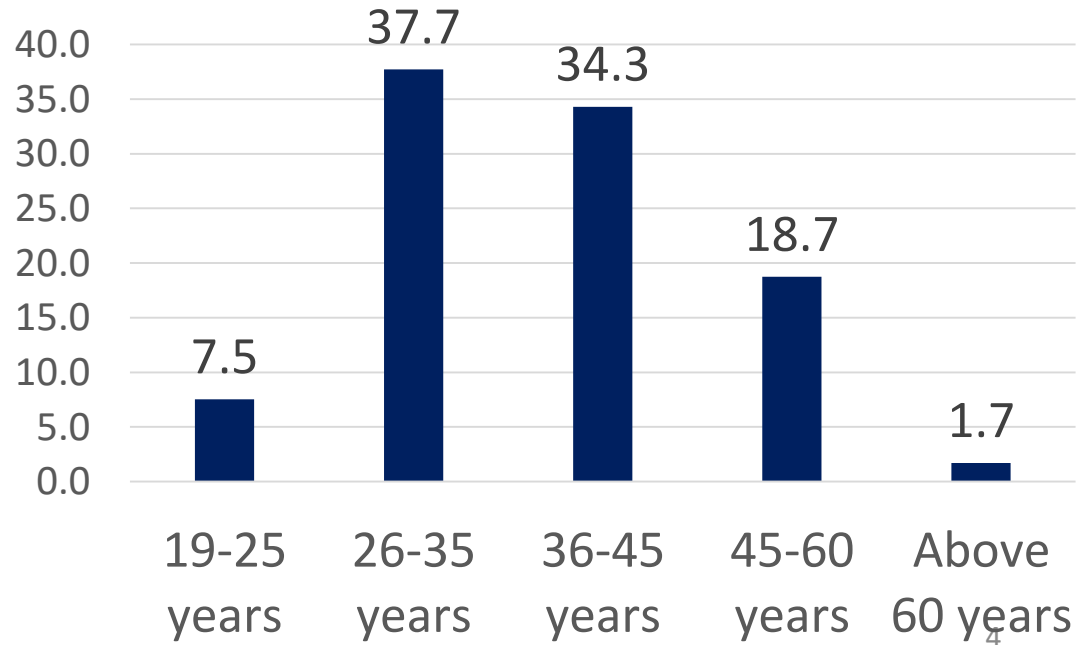
## Gender



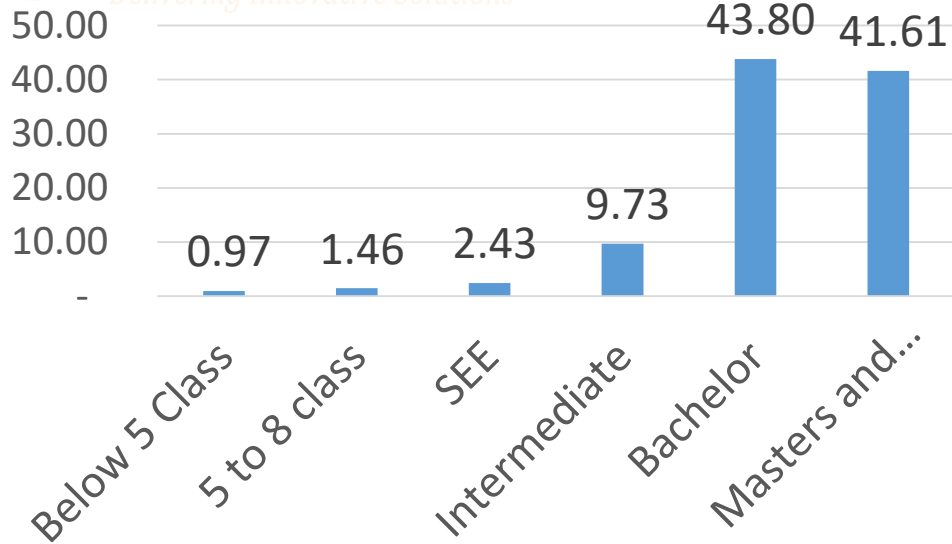
**Male: 86.9%**  
**Female: 12.9%**

**79.6% were  
below 45 years**

## Age Group



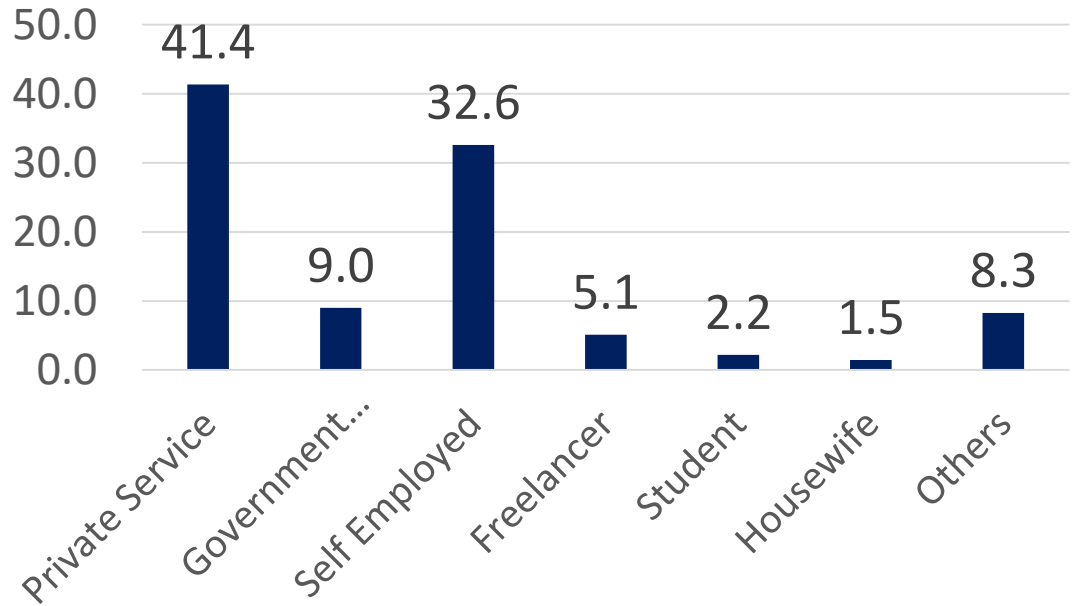
## Education



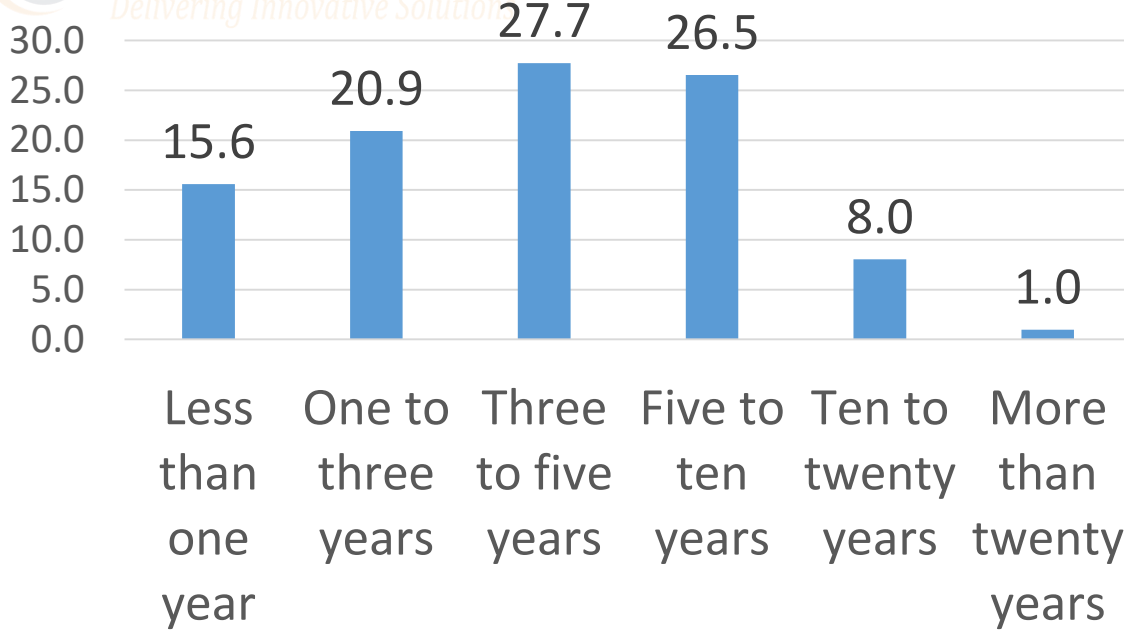
Bachelors: 43.80%  
Masters: 41.61%

**Private Service: 41.4%**  
**Self Employed: 32.6%**

## Occupation



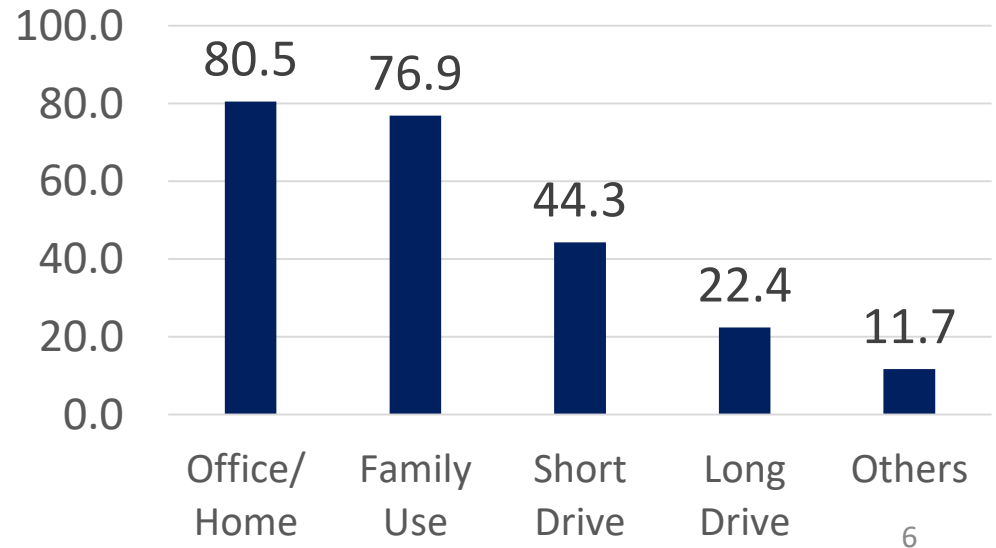
## Duration of Vehicle Use (Non EV)



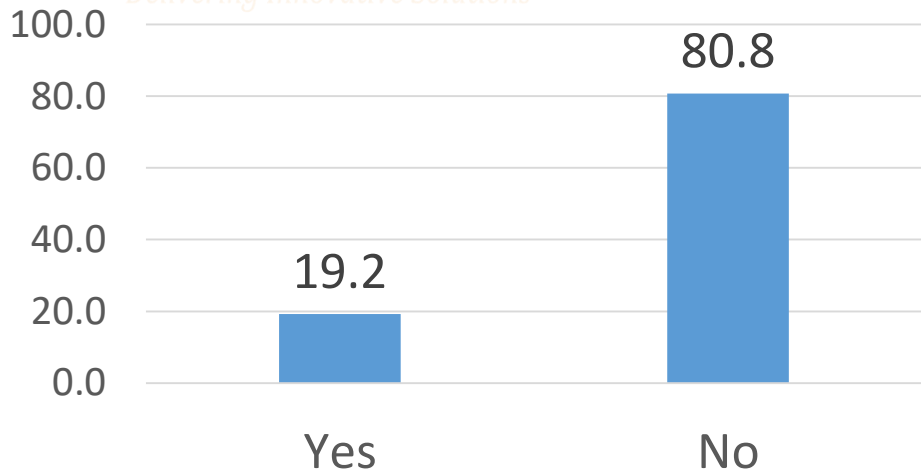
**Below 10 years:  
90.8%**

**Office/Home Use: 80.5%**  
**Family Use: 76.9%**  
**Short Drive: 44.3%**

## Purpose of Vehicle Use



## Possess second vehicle



## Second Vehicle

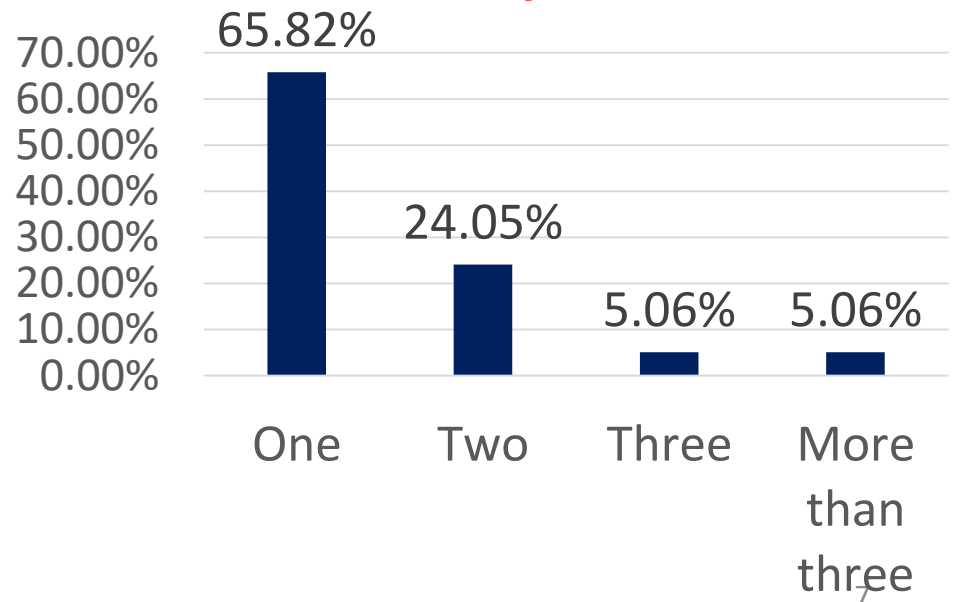
No: 80.8%

Yes: 19.2%

**One: 65.82%**

**Two: 24.05%**

## If second vehicle, how many?

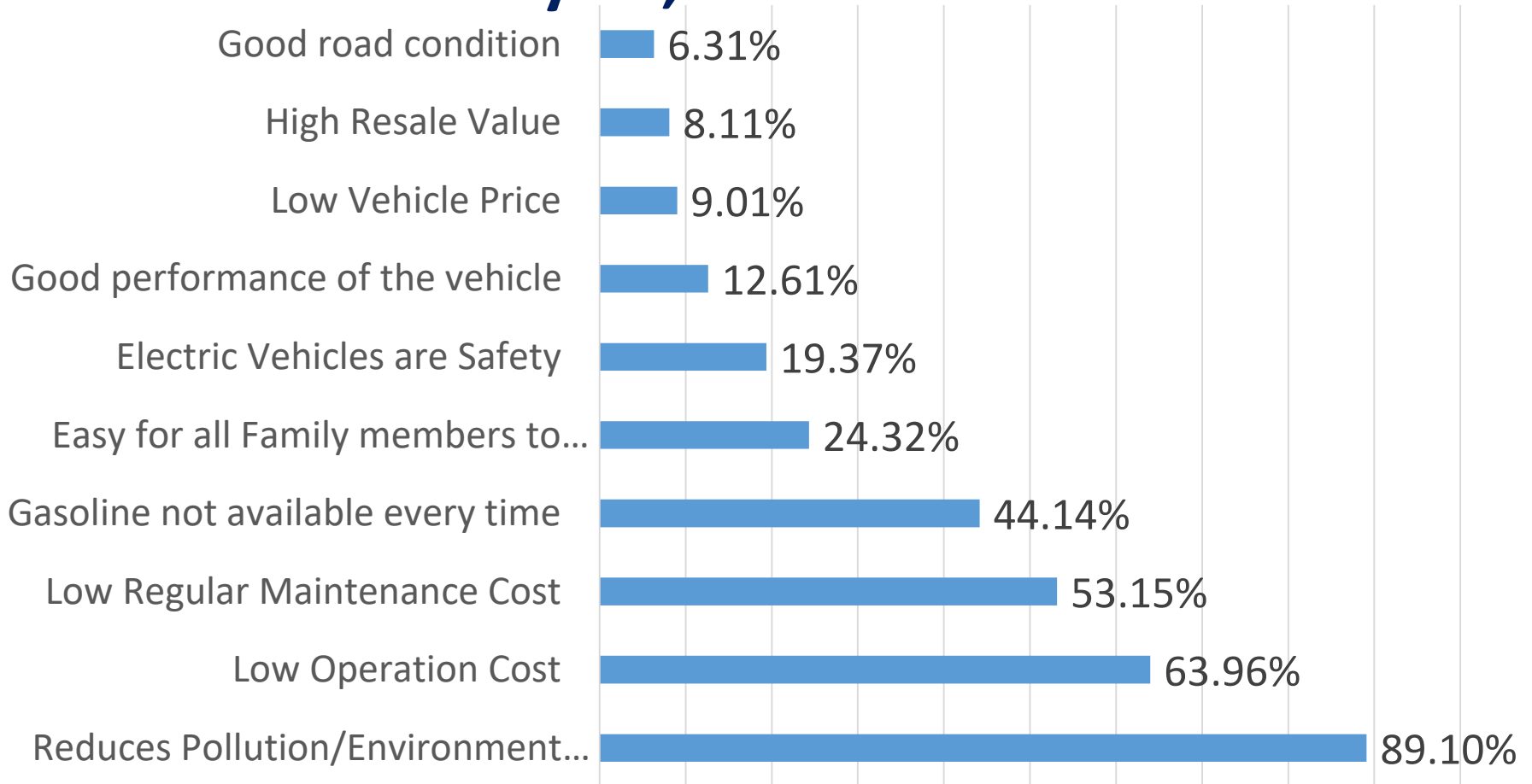




# Want to buy electric vehicle in Future?

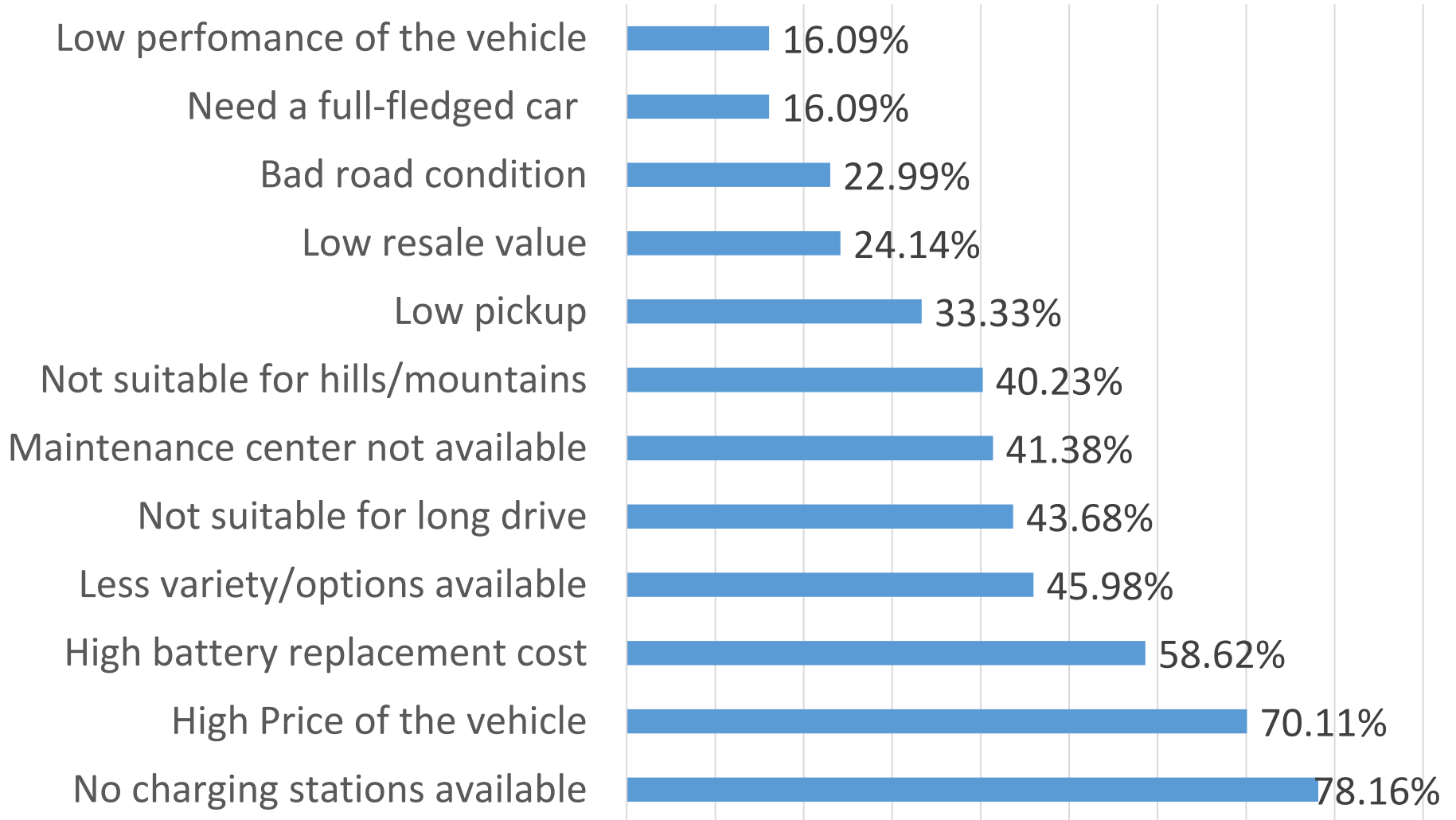
Yes: 54%, No: 21.2%, Don't Know: 24.8%

## If want to buy EV, what are the reasons?



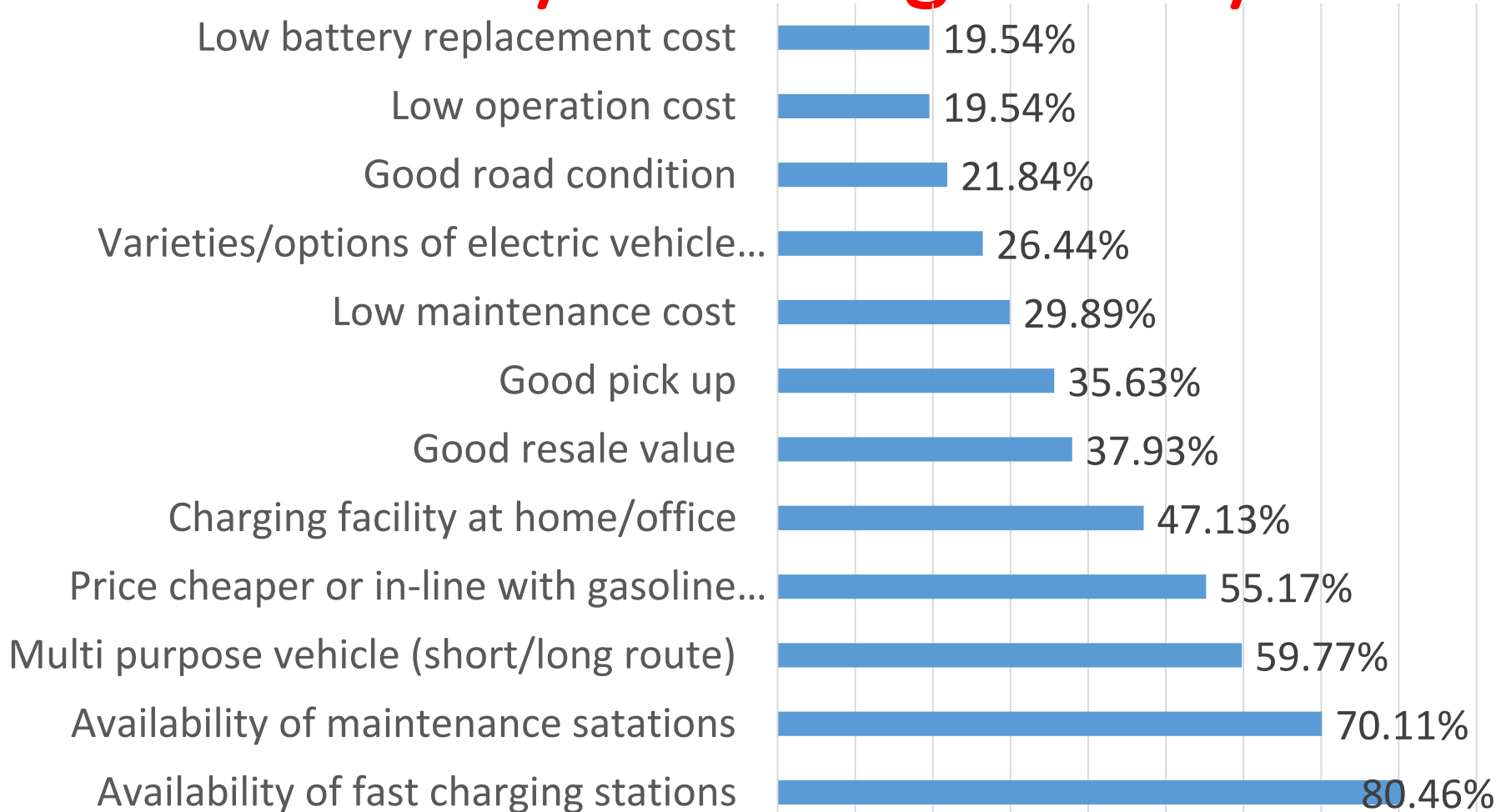


# Why don't want to buy EV?



# Don't want to buy EV

## What may encourage to buy?



# Perception towards Electric Vehicle

	<b>Mean</b>	<b>Std. Deviation</b>
Environment Concern	4.4704	.58609
Operation Maintenance Cost	3.6959	.69840
Awareness	3.8224	.66081
Price	3.7190	.73963
Quality of Vehicle	2.9943	.73821
Promotion	2.7486	.76971
Availability	2.0397	.78557
Tariff	3.5328	.82463
Attitude	3.3812	.71008
Adoption Intension	3.4193	.90207

# Regression Results

- Quality of EV, Low tariff, Awareness, Low operation and maintenance cost and availability creates attitude towards EV. ( $\beta_Q = .274$ ,  $\beta_T = .201$ ,  $\beta_A = .181$ ,  $\beta_O = .147$ ,  $\beta_{AV} = .101$ ,  $R^2 = .359$ )
- Price, Promotion and Environmental Concern have no affect on attitude formation towards EV.
- Adoption Intension towards EV is formed through attitude ( $\beta = .844$ ,  $R^2 = .441$ )

# Focus Group Discussion (Non EV Users)

- High price although low custom tax. Low road tax
- Prefer as a second car within city, use as a fancy vehicle
- Unaware of EV features, distance travelled at full charge, safety issues, price of spare parts
- Lack of expertise for maintenance
- Very less options available. Need a multipurpose car
- Issues: Fast charging stations, vehicle pickup, battery life, high battery replacement cost, constant voltage supply, no resale value, Lithium Ion battery disposal

# In depth Interview (EV Users)

- High price compared to gasoline vehicle.
- Use as a city car, have not taken outside KTM.
- Easy and comfort while driving.
- Low operation and maintenance cost
- Easy charging at home and office
- Not reliable for long route

## In depth Interview (Government stakeholders)

- Government promoting EV, Plan: 20% of the vehicle sales are EV by 2020 A. D.
- Low custom duty and road tax
- Won't establish charging station, encourage dealer
- Working for setting charging standards
- No current battery disposal plan and modality

# Key Informants Interview (Dealers)

- Pre Introduction and experimental Phase, EV market is growing
- No aggressive promotion
- Low operation and maintenance cost
- Limited sales, no infrastructure to sell in high volume
- Immediate switching to EV is low
- Pick up is an issue



# Conclusion and Recommendations

- Focus on charging station
- Highlight product features in promotion
- Manage battery disposal mechanism



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