CONSUMER PERCEPTION AND PURCHASE INTENTION OF ELECTRIC VEHICLES

A Dissertation submitted to the Office of the Dean, Faculty of Management in partial fulfillment of the requirements for the Master's Degree

by

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CERTIFICATION OF AUTHORSHIP

I hereby corroborate that I have researched and submitted the final draft of dissertation entitled **"Consumer Perception and Purchase Intention of Electric Vehicles"**. The work of this dissertation has not been submitted previously for the purpose of conferral of any degrees nor it has been proposed and presented as part of requirements for any other academic purposes.

The assistance and cooperation that I have received during this research work has been acknowledged. In addition, I declare that all information sources and literature used are cited in the reference section of the dissertation.

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REPORT OF RESEARCH COMMITTEE

Ms. Anu Tamang has defended research proposal entitled **"Consumer Perception and Purchase Intention of Electric Vehicles"** successfully. The research committee has registered the dissertation for further progress. It is recommended to carry out the work as per suggestion and guidelines of supervisor Dr. Binita Manandhar and submit the thesis for evaluation and viva-voce examination.

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APPROVAL SHEET

We, the undersigned, have examined the thesis entitled **"Consumer Perception and Purchase Intention of Electric Vehicles"** presented by Anu Tamang, a candidate for the degree of Master of Business Studies (MBS Semester) and conducted the Viva voce examination of the candidate. We hereby certify that the thesis is worthy of acceptance.

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Anu Tamang

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ABBREVIATIONS

CB	:	Cost Benefit
CI	:	Charging Infrastructure
e.g.	:	Example
EC	:	Environment Concern
IBM	:	International Business Machine Corporation
MS. DO	:	Microsoft Disk Operating System
No.	:	Number
PI	:	Purchase Intention
Res	:	Respondents
SEM	:	Structural Equation Modeling
SI	:	Social Influence
SPSS	:	Statistical Package for Social Sciences
T.U.	:	Tribhuvan University
TC	:	Technological Concern
VIF	:	Variance Inflation Factors

ABSTRACT

This study examines the consumer perception and purchase intention of electric vehicles. The study has employed descriptive and casual research design. This study used descriptive statistic, correlation coefficient and multiple regression to analyze the data. This study shows that consumers agreed that cost benefit and technological concern factor highly affects their purchase intention towards electric vehicle and they believe that their purchase intention was also high. The correlation analysis also shows that the correlation analysis reveals that environment concern and cost benefit have significant positive relationship with purchase intention. At the same time, there is significant positive association between technological concern and purchase intention. Similarly, correlation value between social influence and the purchase intention is significant positive. Moreover, correlation value between charging infrastructure and the purchase intention is significant positive. The multiple regression reveals that there is significant positive effect of environment concern and cost benefit on purchase intention. Then, there is also significant positive effect of technological concern on purchase intention. At the meantime, social influence has significant positive impact on purchase intention. Finally, charging infrastructure has significant positive effect on purchase intention. However, all the factors have significant impact on purchase intention towards electric vehicle in Nepal. The results offer important information for policymakers and industry leaders to develop strategies that facilitate the shift to sustainable transportation, promoting a cleaner environment and better public health in Kathmandu Valley.

Keywords: *Purchase intention, environment concern, cost benefit, technological concern and charging infrastructure*

CHAPTER - I
INTRODUCTION

1.1 Background of the Study

The development of electric vehicles (EVs) is still in its infancy. Concerns regarding cost and availability impede adoption. Since high-capacity batteries affect EV subsidies within an EV ecosystem, EV batteries are crucial in deciding EV prices and costs. By reducing greenhouse gas emissions, electric vehicles are one example of a contemporary technology that could help address the root causes of climate change. However, externalities such as pollution reduction and knowledge appropriation lead to societal and economic benefits that are not reflected in the cost of electric vehicles. Companies have taken a variety of actions in response to the resulting market failures. Numerous other socioeconomic factors that are likely to influence the adoption rates of electric vehicles were uncovered by our current analysis. The development of electric vehicles (EVs) had a tremendous impact on environmental conservation. However, because to the low degree of public acceptance of EVs, there are still some challenges in EV marketing (Chawla et al., 2023).

Modern, cutting-edge technology will be included into the next electric vehicle (EV), guaranteeing long-range capabilities while putting comfort and efficiency first (Winter et al., 2010). Electric mobility has been studied recently from a number of viewpoints, including technological, urban, logistical, economic, and environmental (Bhalla et al., 2018). Studies show that there are significant obstacles in the way of building appropriate markets for electric cars, especially with regard to public acceptability and perception in India. The transition from gasoline-powered to electric cars necessitates broad outreach and the development of confidence in the EV industry. Despite these initiatives, there is still a lot of opposition to EV adoption.

Electricity distribution could be viewed as a spectrum, with efficiency ranging from moderate hybrid systems that combine gasoline and diesel engines to completely autonomous driving powered by fuel cell or battery electric technologies (Weiss et al., 2012; Tamor et al., 2013). Emerging alternatives, such as electric cars (EVs), provide consumers with high-performance, efficient solutions that emit fewer carbon emissions than conventional carbon-based vehicle technology. The purpose of this

study is to add to the few conversations that have been had so far on the difficulties that electric vehicles have had breaking into the general market. It is critical to assess a vehicle's emissions in relation to its energy production when thinking about sustainability in this context. EVs must be demonstrated to have the lowest emissions in order to forward a sustainability-driven agenda. When electricity is applied to a vehicle, the basic problem still exists: in order to produce propulsion, each electron must leave the system as efficiently as possible. This is due to the fact that efficiency is a crucial factor in assessing automobiles. The objective of electrifying the transportation industry is unlikely to be accomplished if high efficiency is not prioritized (Yegin & Ikram, 2022).

Perception is a continuous, thorough assessment of individuals, things, ads, or problems, and attitudes are frequently persistent over time. The process by which people choose, arrange, and interpret sensory data is referred to as perception. In the early stages of the automotive industry's growth, electricity was essential. Even though the automobile industry has been studying electric cars for a number of decades, successfully bringing these cars to market still presents several obstacles. The increased public awareness of environmental issues surrounding electric vehicles is one of the main drivers for this study. We think that the use of fossil fuels will decline in the future due in large part to electric vehicles. This study aims to investigate how different factors affect customers' propensity to buy electric automobiles (Digalwar & Rastogi, 2023).

The hidden promise to oneself to buy the item again on a future shopping trip is known as purchase intention (Fandos & Flavian, 2006). It is crucial because companies aim to sell more of a certain product in order to maximize profits. Purchase intention reflects the perception of client retention. Customers' intents to buy are greatly influenced by certain brand functions, including brand image, product quality, product knowledge, product participation, product features, and brand loyalty.

In a nation like Nepal, where environmental concern is prominent, individuals may consider electric cars (EVs) if they decide to buy a car. They will probably discover, though, that a lot of the features are rather comparable to those of conventional fuel-powered vehicles. The problem comes when people find out how much an EV costs,

which can be a big obstacle. In addition to the cost, consumers are deterred from completely embracing the notion of switching to cleaner, greener automobiles by the scarcity of charging stations and frequent power outages (Rahman, 2024).

Even though electric cars (EVs) have many advantages, issues including high starting prices, lengthy charging periods, and inadequate infrastructure have prevented EVs from becoming widely used. Nepal is still in the early phases of vehicle electrification, therefore even with the incentives encouraging EVs, the country's market penetration is still low. EV adoption is still in its early stages of development. In order for EVs to become a popular product, the government must carefully assess how the general public views this new technology and determine any obstacles that must be removed before EVs can be extensively used (Pyakurel et al., 2025).

Electric vehicles were first introduced in Nepal in 1975 with trolley buses operating in the Kathmandu Valley. However, EVs for private usage only began to gain traction in Nepal in the late 2000s, with the Indian brand Mahindra introducing its Reva model as one of the first private EV entrants to the market. Meanwhile, one of the first Chinese EVs to enter Nepal was BYD’s e6 model which was used for presidential transportation. In terms of data, in the first four months of fiscal year 2024/25, 3,487 EVs worth NPR 8.37 billion were imported in Nepal. Figure 2 depicts the trend in the import of electric cars, jeeps, and vans from China and the world from the fiscal year 2019/20 to 2023/24. As depicted in the chart, the import of EVs was minimal in 2019/20 and 2020/21 due to the coronavirus pandemic and subsequent import ban on cars. However, the imports skyrocketed by almost 200% in the last two fiscal years. In FY 2023/24, the total imports were 11,701 EVs, with 8,938 (76.4%) from China, while there were 2763 EV imports from other countries. Moreover, Chinese EV imports dominated the entire automobile market in general as total EV imports accounted for one-third of all automobile imports of the nation (Ministry of Finance, 2025).

Numerous variables impact the current state of affairs and concerns surrounding Nepalese consumers' attitudes and intentions to buy electric vehicles (EVs). Despite being relatively new, Nepal's EV industry is expanding gradually. Even though EVs are becoming more and more popular in Nepal, there are still a lot of obstacles to

overcome, such as high upfront prices, poor charging infrastructure, and a lack of knowledge about EV maintenance. Nonetheless, the demand for EVs in cities is being driven by government incentives, environmental concerns, and changing consumer attitudes. As EV charging infrastructure expands and customers learn more about the long-term benefits of EVs, purchase intention is likely to rise. The government, manufacturers, and consumers must collaborate to tackle these challenges in order to create a viable EV ecosystem in Nepal. Thus, the purpose of this study is to assess how Nepalese consumers see and intend to buy electric automobiles.

1.2 Problem Statement

Consumers' opinions on green products have evolved as a result of the environmental degradation over the last few decades, and they are now constantly looking for methods to live "greener" lifestyles. Kilbourne and Pickett (2008) assert that the way people buy vehicles reflects how society is always changing and how people are become more ecologically conscious. As was already noted, data demonstrating the market's growth indicates that an increasing number of buyers view electric vehicles as a more ecologically responsible option than traditional automobiles. The national benchmark survey on consumer attitudes about EVs indicates that the subject is still contentious and there is still a great deal of controversy regarding them (Liao et al., 2017).

According to Sang and Bekhet (2015), the desire to use electric cars was significantly positively impacted by social factors, performance characteristics, financial rewards, environmental concerns, demography, infrastructural preparedness, and government actions. According to Lai et al. (2015), one of the main factors influencing the uptake of completely electric vehicles was the impression of cost savings. Khazaei and Khazaei (2016) emphasized that the requirement for new customer behaviors makes integrating electric cars as a new technology difficult. People's opinions of electric vehicles are influenced by a number of elements, but the most significant ones are driving range, charging time, and vehicle ownership costs (Coffman et al., 2017).

Bhalla et al. (2018) found that customers' environmental concerns and level of technological confidence influenced their propensity to buy electric automobiles. A number of elements, including as public approval, cost, and infrastructure, contribute

to the resistance to adoption. The notion that these elements are important motivators for the uptake of electric vehicles is further supported by Rajper and Albrecht (2020). Furthermore, Lashari et al. (2021) discovered that the most accurate predictors of whether a person would purchase an electric car were economic and environmental factors. Additionally, their study showed that consumers' inclinations to buy EVs were adversely affected by technological worries.

Bhat et al. (2022) demonstrated that while facilitating conditions and anxiety had a negative impact on consumers' intentions to adopt electric vehicles, environmental passion, technological enthusiasm, social image, social influence, perceived benefits, and performance expectations had a positive impact. Digalwar and Rastogi (2023) discovered that while performance-related variables had a negative influence on the adoption rate of electric cars in India, infrastructural and financial factors had a favorable effect. Dhar (2024) discovered that adoption intention was significantly positively impacted by social image and performance anticipation, but not by environmental passion, technical enthusiasm, social influence, or perceived advantages.

According to Pyakurel et al. (2025), social influence, perceived economic benefits, environmental concerns, and charging infrastructure all significantly increased the likelihood that people would buy electric two-wheelers. The absence of quantitative data on the Nepalese EV industry and little understanding of customer perceptions of the elements affecting purchase intent are two issues brought up by the researchers. The study is based on this knowledge gap, and the theories employed are closely related to the pertinent ideas. The primary problem is a lack of knowledge on the intents of Nepalese customers to buy electric cars, especially because they are a relatively new product on the market, and the unique features of these automobiles that influence consumer opinions. The following concerns are examined in this study in relation to the Nepalese EV market.

- What is the level of consumers purchase intention towards electric vehicles?
- Is there any relationship of factors such as environment concern, cost benefit, technological concern, social influence and charging infrastructure with consumers’ intention to purchase towards electric vehicles?

- How do environment concern, cost benefit, technological concern, social influence and charging infrastructure effect on consumers' intention to purchase electric vehicles in Nepal?

1.3 Objectives of the Study

The objectives of the study are as follows:

- To assess consumer perception and intention for electric vehicles.
- To examine the relationship of factors such as environment concern, cost benefit, technological concern, social influence and charging infrastructure with consumers' intention to purchase towards electric vehicles.
- To analyze the effect of environment concern, cost benefit, technological concern, social influence and charging infrastructure on consumers' intention to purchase electric vehicles in Nepal.

1.4 Research Hypotheses

The study questions mentioned above are the basis for the following hypothesis. Therefore, the purpose of this study is to evaluate the following theories on the Nepali EV market.

i. H_1: There is positive effect of environment concern on consumers' purchase intention to EV in Nepal.

ii. H_2: There is positive effect of cost benefit on consumers' purchase intention to EV in Nepal.

iii. H_3: There is positive effect of technological concern on consumers' purchase intention to EV in Nepal.

iv. H_4: There is positive effect of social influence on consumers' purchase intention to EV in Nepal.

v. H_5: There is positive effect of charging infrastructure availability on consumers' purchase intention to EV in Nepal.

1.5 Rationale of the Study

Although public perceptions of a variety of items have been the subject of several studies, this one focuses exclusively on electric cars in Nepal. Cost benefits, environmental concerns, technological difficulties, and social effect on purchasing

intentions are the three main elements that are included in order to close the current knowledge gap. The study also looks at how these elements could influence Nepal's attempts to establish an atmosphere that encourages the use of electric vehicles. Managers' comprehension of EV marketing tactics and how they affect market success has been greatly impacted by the findings. These insights may be used by EV marketers and producers to have a deeper understanding of their target market. The importance and applicability of this study are demonstrated by the points that follow.

- It offers insightful information on EV marketing tactics from the viewpoint of entrepreneurs, which may aid in the creation and improvement of future marketing strategies that work.
- By emphasizing important variables that may have an influence on customer behavior and industry trends, the research also assists other import and export companies.
- It gives CEOs, marketing managers, and entrepreneurs essential information to improve EV firms' competitive standing. Therefore, the results of this study would also be useful to people in Nepal, including educators, students, and politicians.
- The business can expand on the findings of this study and carry out more research to create more focused strategy.

1.6 Limitations of the Study

The following are the study's restrictions:

- This study is concentrated on consumer perception and purchase intention of electric vehicles.
- The study is based on primary data.
- Katmandu valley is taken for the study.

CHAPTER II
LITERATURE REVIEW

An essential and crucial part of every research project is assessing the corpus of existing literature. Examining research papers or other pertinent claims in the relevant field of study is a crucial stage in doing new research since it makes one aware of all previous studies, their shortcomings, and their findings. This chapter reviews and analyzes a large number of books, articles, and published and unpublished works on connected topics from various economic publications, research papers, newspapers, and journals. It also looks up relevant information on the internet. The theoretical review and the empirical review are the two parts of this chapter.

2.1 Theoretical Review

The theoretical review serves as the theoretical foundation for a study. Whereas a theoretical research rests its results on prior ideas, hypotheses, and conceptions, an empirical study bases its conclusions on verification through trials, experiences, and observations; the latter has no practical relevance. This research was grounded in both theoretical and empirical literature. Below is a list of the theories that guide this inquiry.

2.1.1 Theories of Consumer Perception and Purchase Intention

The Diffusion of Innovation Theory, the Theory of Planned Behavior, the Theory of Purchase Intent, the Technology Acceptance Theory, and the Value Perception Theory are among the theories examined in this study. These frameworks are employed to comprehend the many elements impacting customer choices and behavior with reference to the uptake of electric automobiles.

2.1.1.1 Theory of Planned Behavior

The Theory of Planned conduct (TPB), first presented by Ajzen in 1991, contends that social factors play a significant role in shaping conduct. The theory offers an organized approach to investigate how customers' intents to buy environmentally friendly items are influenced by social influences, personal characteristics, attitudes, and outcome expectations. According to the TPB, a person is more likely to be

motivated to carry out an action if they have a good attitude regarding the support from prominent people (subjective norms). Because it provides a framework for comprehending the transition in consumer behavior from a consumption-driven mindset to one that also takes environmental concerns into consideration, this theory is pertinent to the current study. Customers may be persuaded to make purchases with a lower environmental effect by their immediate social surroundings. Furthermore, marketers, who have the capacity to be powerful individuals, are essential in influencing customer demand for more ecologically friendly products.

2.1.1.2 The Diffusion of Innovation Theory

Although innovation and ongoing development have numerous benefits, they may not always ensure public acceptance or adaption. It may be difficult and time-consuming to adjust to new developments, and it frequently takes an innovation years to reach a point where society is prepared to accept it. This brings up a crucial query: how can we quicken the process of adjusting to new innovations? Through a variety of communication channels, inventions spread across society, as explained by the Diffusion of inventions (DOI) Theory (Rogers, 1983). According to Al-Jabri and Sohail (2012), DOI is one of the most generally recognized theories that looks at the variables affecting a person's willingness to embrace new innovations or technology in their daily lives.

A thorough framework for examining the effectiveness of eco-innovations from the viewpoint of the customer is provided by the Diffusion of Innovations Theory. It can aid in comprehending why various marketing approaches for eco-innovations produce diverse outcomes (Moon, 2020). Moon (2020) defines eco-innovations as goods or technology that have a lower environmental effect than conventional or commonly used alternatives. If a business's technology or product has a less environmental impact than traditional designs, it can be classified as an eco-innovation. Eco-innovations need to compete in the market, just like any other product. Nonetheless, a number of countries have put laws into place to support companies that use eco-innovations to compete in the mainstream market (Sierzchula et al., 2012). This suggests that electric vehicles (EVs) can be categorized as eco-innovations because of their potential environmental advantages (Moon, 2020).

Time, social structure, communication channels, and innovation are the four main factors that Rogers (1983) identified as influencing the diffusion of new technology. These components demonstrate the widespread adoption of modern technology in society. According to Rogers, innovation is "an idea, activity, or item that is experienced as new by a person," highlighting the subjectivity of what constitutes innovation and the fact that anything is only deemed novel by the individual. Rogers also pointed out that although technical advancements may lessen ambiguity about the technology's knowledge base, they may also cause new misunderstandings about the consequences of the technology among prospective users. It was further shown by Fliegel and Kivlin (1966) and MacVaugh and Schiavone (2010) that a number of factors, such as cost, returns, efficacy, time and effort savings, perceived utility, and the availability of technological infrastructure, affect the adoption of innovations. The adoption process is also significantly influenced by "external" variables, such as the features of the older technologies that the innovation is intended to replace, as noted by MacVaugh and Schiavone (2010).

2.1.1.3 Theory of Technology Acceptance

There has always been consumer opposition to new technology, which has led researchers to investigate the variables influencing the uptake, acceptability, and continued usage of technology. The Technology Acceptance Model (TAM), created by Davis in 1989, is one of the most popular frameworks for examining these elements (Al-Emran & Shaalan, 2021). According to Davis (1989), the Theory of Reasoned Action had an impact on the creation of TAM. The model was created to give a general explanation of user behavior across different computing platforms and to give an overview of how users embrace computer technology. According to Davis (1989), TAM was developed because, regardless of how carefully new ideas and technologies are introduced, consumer perceptions of them have a direct impact on their intents to utilize them. In his research, Davis found that perceived utility and simplicity of use are two important criteria that have been emphasized in previous studies and are crucial to comprehending technology use (Chen & Chao, 2011). These two elements play a key role in determining how customers engage and embrace new technology.

Perceived usefulness, the first element of the Technology Acceptance Model (TAM), postulates that users would choose to utilize an application depending on how much it enhances their results. According to the second factor, perceived ease of use, a product may not be embraced if it is not thought to be practical or simple to use. Customers are likely to respond negatively to a product if they find it difficult to utilize. According to Davis (1989), perceived utility and perceived ease of use are two criteria that are related and have an impact on one another. Furthermore, the author points out that outside factors may also have an impact on these elements, influencing users' opinions and, eventually, their adoption choices.

2.1.1.4 Theory on Purchase Intent

The Theory of Planned Behavior (TPB) is one of the most well-known frameworks for understanding purchase intention, despite the fact that it is a big issue with numerous facets to investigate. In order to provide a more thorough method of comprehending consumer behavior, Ajzen (1991) built upon the prior Theory of Reasoned Action to create the TPB. The theory describes a number of elements that affect customer choices and shows how these aspects work together. Since planned behavior is a hypothesis made up of several components that work together to explain a particular action—like making a purchase—it is a helpful method for studying consumer behavior, according to Ajzen (1991). The theory in this research focuses on comprehending the elements that affect customers' purchasing decisions and the fundamental causes of such decisions. This knowledge makes it possible to analyze different consumer trends and draw conclusions that may be used in the business sector to better address and influence customer behavior (Ajzen, 1991).

According to Ajzen (1991), a person's attitude, the first variable in the Theory of Planned Behavior (TPB), indicates whether or not they think a certain behavior is advantageous. This implies that, depending on the individual's sentiments, every particular conduct is instantly interpreted as either relatively favorable or bad. Subjective norm, the second component, measures any social pressure a person may have to engage in a specific action. This is demonstrated when an individual decides to behave in a manner that they feel is in line with what other people find suitable or acceptable (Ajzen, 1991).

According to Ajzen (1991), perceived behavioral control is the degree to which a person believes that the opportunity and resources needed to carry out an action are readily available or scarce. A person's perception of their level of control over their behavior is influenced by their control beliefs, which are reflected in this variable. It implies that people consider the different choices and resources at their disposal, letting these elements mold and impact their actions.

According to Indriani et al. (2019), environmental knowledge has a direct impact on attitudes toward green products, which in turn influences customers' inclinations to buy green products. This implies that customers are more likely to be mindful of the things they purchase and their effects on the environment as they grow more knowledgeable about environmental problems and possible solutions. Customers are therefore more inclined to buy ecologically friendly items as a result of this greater awareness (Indriani et al., 2019). The authors also stressed that their results, which are consistent with those of numerous other research, including Wulandari et al. (2015), demonstrate that attitude is strongly impacted by the availability of environmental information.

People evaluate obstacles and difficulties according to the resources' availability when they require opportunities, information, abilities, or other resources to finish a job. Because it takes into account how simple or difficult a certain action is to carry out based on the resources available, the Theory of Planned Behavior is pertinent in these kinds of situations. Perceived behavioral control is a crucial factor in forecasting the adoption of electric cars since it encompasses both external and internal resources, including infrastructure, opportunity, and knowledge, in addition to internal resources like self-efficacy and personal capabilities. Furthermore, as Liao et al. (2017) point out, it represents the impact of social impact, which is frequently linked to the Diffusion of Innovation Theory. This demonstrates how the adoption of new technology, such as electric automobiles, may be influenced by both personal capacities and external societal forces.

2.1.1.5 The Value Percept Theory

Similar to LaTour and Peat, Westbrook and Reilly (1983) suggested that the Expectancy-Disconfirmation paradigm might not be the best model for describing

consumer happiness. They proposed that consumers' satisfaction or dissatisfaction is more likely to be determined by comparing criteria other than expectations. La Tour and Peat (1979) first suggested the Value-Percept Disparity hypothesis, which they provided as an alternative to the Expectancy-Disconfirmation paradigm. Westbrook and Reilly argued that expectations do not always match the values or wants connected to a product, challenging the use of predictive expectations as the standard for satisfaction in the traditional Disconfirmation model. They believe that customers' expectations may not always align with what they value. As a result, they suggested that values—rather than expectations—are a more reliable foundation for describing customer happiness or discontent. According to the Value-Percept Theory, a person's emotional response to a cognitive assessment process in which they evaluate their perceptions of a product or service to their needs, wants, desires, and values is what leads to satisfaction (Westbrook & Reilly, 1983). As with the Expectancy-Disconfirmation paradigm, a greater degree of discontent is indicated by a widening value-perception difference.

2.1.2 Concept of Consumer Perception

The instinctive association that consumers, companies, and brands form when they encounter specific pictures linked to them is known as consumer perception. Perception varies from person to person and is not synonymous with objective reality. Different people may have different variations of the brand description depending on their point of view (Kotler & Keller, 2014)

Any business has to understand how consumers perceive its goods, services, or overall operations. The company's goods and services are influenced by what customers think. if the company tries to find out what its consumers think of it. It may then provide its items to clients after making any necessary modifications. Therefore, figuring out how clients perceive a business is a crucial and challenging endeavor (Shandilya & Skotte, 2021).

The process by which an individual receives, interprets, and converts information into an output is known as perception. Sensation is the result of the five senses detecting stimuli, which is the first step in perception. When energy patterns—also known as

stimulus inputs—arrive at the sense receptors, perception starts. The energy is subsequently transformed by each receptor and sent to the brain as nerve impulses, which produce the senses of taste, touch, smell, hearing, and sight. People's conduct, attitudes, beliefs, physical attributes, and demographic features are all influenced by how they see their personalities (Malladi et al., 2020).

2.1.3 Concept of Purchase Intention

One of the key elements influencing the forecasting of customer behavior is purchase intention. According to Schiffman and Kanuk (2000), it shows the likelihood of making a purchasing choice as well as the readiness to look for and assess the available possibilities. to improve the purchasing choice by targeting the mental processes According to research, customers utilize perceived worth as a positive signal to influence their purchase decisions in order to get around the issue of inadequate information. Additionally, if customers believe a product will live up to its promised value, they are more inclined to buy it (Chen & Chao, 2011).

The likelihood that a consumer will intend to buy or be receptive to getting an item or service in the future is known as their purchasing intention. It is debatable if marketing a product as handcrafted might influence consumers' propensity to buy. Because customer-orientation is driving the concurrent expansion of the consumer market with changing customer requirements and perceptions, design methods place a great deal of emphasis on the variety and cultural components of product specifications (Islam & Hani, 2021).

Purchase intention, according to Pandjaitan (2018), is a key indicator of consumer behavior and is frequently based on how well the qualities and characteristics of the product in question match the motivations for the purchase. One way to determine a customer's likelihood of buying a certain product is to look at their purchasing intention. The probability that consumers will behave in a specific way in the future is a good indicator of their intention to make a purchase. However, actual purchase and intention may not be the same thing (Kotler & Keller, 2014).

2.2 Empirical Review

Sang and Bekhet (2015) analyzed the modelling electric vehicle usage intentions: an empirical study in Malaysia. The primary goal of this study was to explore the main factors influencing Malaysia's adoption of electric vehicles. A multiple regression model was employed to analyze the data. The findings revealed that social influence, performance characteristics, financial incentives, environmental awareness, demographic factors, infrastructure development, and government support all had a significant positive impact on the intention to use electric vehicles. Among these, performance characteristics emerged as the most influential factor driving the intention to adopt electric vehicles.

Lai et al. (2015) analyzed the factors influencing the behavioural intention towards full electric vehicles: an empirical study in Macau. The study aimed to identify the factors that influence individuals' intentions to purchase fully electric vehicles. To analyze the data, the researchers applied confirmatory factor analysis and structural equation modeling. The results indicated that attitudes toward environmental policies and environmental concerns shape people's perceptions of fully electric vehicles, which subsequently affect their intention to buy them. The study concluded that perceived economic advantages play a crucial role in encouraging the adoption of fully electric vehicles.

Wang et al. (2016) researched predicting consumers' intention to adopt hybrid electric vehicles: using an extended version of the theory of planned behavior model. The primary aim of this research was to conduct an in-depth analysis to better understand consumers' intentions to purchase hybrid electric vehicles (HEVs). The data was analyzed using correlation coefficients. The findings revealed that environmental concern, attitudes toward adopting HEVs, subjective norms, perceived behavioral control, and personal moral norms all showed a significant positive relationship with the intention to adopt HEVs. Consequently, the study concluded that all these factors were strongly linked to consumers' intention to purchase hybrid electric vehicles.

Khazaei and Khazaei (2016) investigated the electric vehicles and factors that influencing their adoption moderating effects of driving experience and voluntariness of use. The primary objective of this study was to investigate the relationship between

social influence, perceived enjoyment, anxiety, facilitating conditions, and the intention to use electric vehicles in the Malaysian market. Multiple regression analysis was used to examine the data. The results showed that social influence, facilitating conditions, anxiety, environmental concern, and perceived enjoyment significantly influenced the intention to use electric vehicles in Malaysia. Therefore, the study concluded that all these factors played a key role in shaping consumer behavior in the Malaysian electric vehicle market.

Degirmenci and Breitner (2017) analyzed the consumer purchase intentions for electric vehicles: is green more important than price and range? The primary goal of this study was to examine consumer intentions to purchase electric vehicles. Structural equation modeling was employed for data analysis. The findings indicated that range confidence and perceived price value were no longer strong predictors of environmental performance for electric vehicles, as they had been in the past. Given the critical issues of global warming, climate change, and air quality, the transportation sector holds significant potential to reduce greenhouse gas emissions. The study also concluded that when electricity is generated from renewable sources, electric vehicles represent a practical and sustainable transportation option.

Bhalla et al. (2018) assessed a study of consumer perception and purchase intention of Electric Vehicles. The study's primary goals were to assess the economic viability and purchase intent of electric vehicles among Indians and look into the variables affecting the uptake of these vehicles by consumers. The data in this study were analyzed using the correlation coefficient. The results showed that attitudes toward purchasing electric vehicles were influenced by factors such as infrastructure, cost, and societal acceptance, whereas consumer trust in technology and environmental concerns were factors that preceded adoption.

Malladi et al. (2020) investigated the client perception of electric vehicles and its impact on sales. The study's goal was to determine how customer perception of electric vehicles affected sales of these vehicles. The data in this study were analyzed using the Pearson product-moment correlation coefficient. The factors that represent consumer perception, such as sales of electric vehicles, driving comfort, social acceptability, and investment in electric vehicles, were found to have a strong positive

association in this study. Additionally, this study discovered a modest association between the mileage component, sales of electric cars, and customer experience elements including personal rating and satisfaction of personal wants.

Varghese et al. (2021) examined a study on consumer perception and purchase intention of electric vehicles in India. The major purpose of this research was to assess Indian customers' opinions of and intentions to buy electric autos. This study employed panel data approaches, notably the pooled ordinary least squares (pooled OLS), fixed effects and random effects estimators to examine the data. According to this study, buying intention is significantly positively correlated with driving range, value for money, infrastructure, and environmental concern. This study came to the conclusion that there was a high correlation between all the parameters and the intention to buy.

Shandilya and Skotte (2021) administered people perception towards adoption of electric vehicle in Kathmandu valley. The purpose of this research was to explore people's attitudes, perspectives, and intentions concerning the broader adoption of electric vehicles (EVs), along with the perceived benefits and challenges influencing consumer acceptance. The analysis involved the use of multiple regression and correlation coefficients. The findings revealed that positive experiences and perceived benefits were strongly associated with increased EV adoption. Additionally, the study found that both the objectives and challenges related to EV adoption were positively linked to perceived advantages but negatively associated with behavioral tendencies. It also concluded that public transportation (PT) infrastructure had a positive correlation with the perceived benefits and travel purposes for EVs, while showing a negative correlation with perceived barriers.

Vashisth, and Gupta (2021) analyzed consumer perception towards Electric Vehicle. The study's main objective was to identify the general dynamics and obstacles that keep people from buying electric cars. The data in this study were analyzed using the one-factor ANOVA test. After assessing several possibilities, the study discovered a substantial association between the characteristics and the perception of an electric car. This demonstrated that consumers' decisions to purchase electric cars were influenced by demographic characteristics as well as income and educational

attainment. According to the study's findings, most respondents thought that infrastructure would be a crucial factor in their decision to buy electric vehicles.

Lashari et al. (2021) investigated consumers' intention to purchase electric vehicles: Influences of user attitude and perception. This study's objective was to assess these problems, focusing on user attitudes and opinions. Binary logistic regression and regression trees were employed in this study's data analysis. According to the study, opinions about the economics and environment around EV use were the two most significant attitudinal traits for forecasting an EV purchase. This study also found that concerns about technology had a detrimental effect on EV purchase intentions.

Yegin and Ikram (2022) administered analysis of consumers' electric vehicle purchase intentions: An expansion of the theory of planned behavior. The study's goal was to investigate the behavioral elements that influence Turkish consumers' intentions to buy electric vehicles (EVPI). The data in this study were analyzed using the correlation coefficient. The behavioral variables of AT, PBC, EC, and GT were found to be positively correlated with EV purchase intentions in this study. Nonetheless, analysis found that consumers' EVPI was negatively impacted by subjective standards.

Bhat et al. (2022) measured and modeling electric vehicle adoption of Indian consumers. The study's primary goal was to examine the variables influencing customer acceptance in the developing Indian market. The data in this study were analyzed using structural equation modeling. According to the study, consumers' adoption intention was positively correlated with their passion for technology, the environment, social impact, perceived advantages, and performance anticipation. Additionally, this study found a negative relationship between anxiety and consumers' intention to adopt.

Digalwar and Rastogi (2023) analyzed the social factors responsible for adoption of electric vehicles in India: a case study. This study's primary goal was to evaluate EVs' sustainability and societal acceptability. Descriptive statistics, structural equation modeling, and hypothesis testing were employed in this study's data analysis. According to this study, car performance criteria had a negative effect on EV adoption

in India, however infrastructural and financial considerations had a favorable effect. This study came to the conclusion that participants who prioritized automobile performance traits were less enthusiastic about the rollout of electric vehicles.

Dhar (2024) analyzed the factors influencing consumer perception and purchase intentions for electric vehicles in the Indian emerging market. The primary aim of this study was to assess the complex interaction of factors influencing consumer decision-making in a rapidly expanding market. Data analysis was conducted using descriptive statistics and multiple regression techniques. The results indicated that both social image and performance expectancy significantly and positively influenced consumers' intentions to adopt electric vehicles. In contrast, factors such as environmental enthusiasm, technological enthusiasm, social influence, and perceived benefits showed no significant effect on adoption intentions. Additionally, the study found that anxiety and the availability of supportive conditions negatively affected consumers' intentions to purchase electric vehicles.

Pyakurel et al. (2025) explored the factors driving consumer's purchase intention towards electric two-wheelers. The main goal of this study was to examine the intentions of consumers in the Kathmandu Valley regarding the purchase of electric two-wheelers. Hierarchical multiple regression was used to analyze the data. The findings revealed that factors such as environmental concerns, perceived economic benefits, social influence, and charging infrastructure all had a significant positive effect on consumers' purchase intentions for electric two-wheelers. The study concluded that environmental concerns played a key role in the adoption of e-bikes, suggesting that these concerns could be effectively utilized in marketing campaigns.

Table 1

Summary of Empirical Review

S.N.	Writer (s)	Topic	Objectives	Methodology	Major Findings
1	Sang and Bekhet (2015)	Modelling electric vehicle usage intentions: an empirical study in Malaysia	To examine the key factors affecting Malaysia's adoption of electric vehicles	A multiple regression model was employed to analyze the data	The study found that social influences, performance attributes, financial benefits, environmental concerns, demographics, infrastructure readiness, and government interventions all had a significant positive effect on

					the intention to use electric vehicles.
2	Lai et al. (2015)	Factors influencing the behavioural intention towards full electric vehicles: An empirical study in Macau.	To examine the factors influencing people's intention to buy fully electric cars.	To analyze the data, the researchers applied confirmatory factor analysis and structural equation modeling	According to the study, opinions about environmental legislation and environmental concerns come before opinions about fully electric vehicles, which in turn affect users' behavioral intentions to buy fully electric automobiles. The adoption of completely electric vehicles was shown to be significantly influenced by the perception of economic benefits.
3	Wang et al. (2016)	Predicting consumers' intention to adopt hybrid electric vehicles: using an extended version of the theory of planned behavior model.	To carry out a thorough analysis and get more insight into customers' intentions to purchase HEVs	The data was analyzed using correlation coefficients	Based on this study, desire to adopt a HEV was significantly positively correlated with environmental concern, attitude toward doing so, subjective norm, perceived behavioral control, and personal moral norm. Thus, this study came to the conclusion that there was a substantial correlation between all the factors and the desire to buy hybrid electric automobiles.
4	Khazaei and Khazaei (2016)	Electric vehicles and factors that influencing their adoption moderating effects of driving experience and voluntariness of use.	To examine the relationship between different factors and intention to use in the Malaysian electric vehicle market	Multiple regression analysis was used for data analysis	According to this study, the intensity of electric car use in Malaysia was significantly influenced by social influence, enabling conditions, anxiety, environmental concern, and reported enjoyment. Thus, this study came to the conclusion that every component had a significant impact on the Malaysian market for electric vehicles.
5	Degirmenci and Breitner (2017)	Consumer purchase intentions for electric vehicles: Is green more important than price and range?	To explore into consumer intentions to acquire electric vehicles	Structural equation modeling was employed for data analysis	The result found that price value and range confidence were not as good predictors of EV environmental performance as they once were. Given the significance of air quality, climate change, and global warming, the transportation industry

					has the ability to significantly cut greenhouse gas emissions.
6	Bhalla, Ali and Nazneen (2018)	A study of consumer perception and purchase intention of electric vehicles.	To evaluate the economic success and purchase intention of electric vehicles among Indians	The data in this study were analyzed using the correlation coefficient	The results showed that attitudes toward purchasing electric vehicles were influenced by factors such as infrastructure, cost, and societal acceptance, whereas consumer trust in technology and environmental concerns were factors that preceded adoption.
7	Malladi, Rokkam and Venkteshwar (2020)	The client perception of electric vehicles and its impact on sales.	To identify the impact of client perception of Electric Vehicles on the sale of Electric Vehicles	The data in this study were analyzed using the Pearson product-moment correlation coefficient	The factors that represent consumer perception, such as sales of electric vehicles, driving comfort, social acceptability, and investment in electric vehicles, were found to have a strong positive association in this study.
8	Varghese, Abhilash and Pillai (2021)	A study on consumer perception and purchase intention of electric vehicles in India.	To examine Indian consumers' perceptions about and intentions to buy electric automobiles	This study employed panel data approaches, notably the pooled ordinary least squares (pooled OLS), fixed effects and random effects estimators to examine the data	Based on this study, buying intention is significantly positively correlated with driving range, value for money, infrastructure, and environmental concern. This study came to the conclusion that there was a high correlation between all the parameters and the intention to buy.
9	Shandilya and Skotte (2021)	People perception towards adoption of electric vehicle in Kathmandu valley.	To determine attitudes, views, and behavioral intentions regarding the widespread use of electric vehicles	The analysis involved the use of multiple regression and correlation coefficients	According to this study, EV adoption was significantly positively correlated with improved experiences and advantages. Advantage and conduct had a negative correlation, whereas the aim and obstacles to EV adoption had a positive correlation.
10	Vashisth, and Gupta (2021)	Consumer perception towards electric vehicle.	To determine the general dynamics and barriers that prevent consumers from adopting electric automobiles	The data in this study were analyzed using the one-factor ANOVA test.	After assessing several possibilities, the study discovered a substantial association between the characteristics and the perception of an electric car. This demonstrated that consumers' decisions to purchase electric cars were

					influenced by demographic characteristics as well as income and educational attainment.
11	Lashari, Ko and Jang (2021)	Consumers' intention to purchase electric vehicles: Influences of user attitude and perception.	To evaluate at these issues, with an emphasis on the attitudes and views of users	Binary logistic regression and regression trees were employed in this study's data analysis	Based on this study, opinions about the economics and environment around EV use were the two most significant attitudinal traits for forecasting an EV purchase. This study also found that concerns about technology had a detrimental effect on EV purchase intentions.
12	Yegin and Ikram (2022)	Analysis of consumers' electric vehicle purchase intentions: An expansion of the theory of planned behavior.	To examine the behavioral factors that affect the intention to purchase electric vehicles (EVPI) of consumers residing in Turkey	The data in this study were analyzed using the correlation coefficient	The behavioral variables of AT, PBC, EC, and GT were found to be positively correlated with EV purchase intentions in this study. Nonetheless, this study came to the conclusion that subjective norms had a detrimental effect on consumers' EVPI; this finding was in line with certain studies in the literature but not with other research.
13	Bhat, Verma and Verma (2022)	Measuring and modeling electric vehicle adoption of Indian consumers.	To analyze the factors affecting adoption of consumers in Indian emerging market	The data in this study were analyzed using structural equation modeling	According to the study, consumers' adoption intention was positively correlated with their passion for technology, the environment, social impact, perceived advantages, and performance anticipation.
14	Digalwar and Rastogi (2023)	Assessments of social factors responsible for adoption of electric vehicles in India: A case study	To assess the social acceptability and sustainability of Evs	Descriptive statistics, structural equation modeling, and hypothesis testing were employed in this study's data analysis	Based on this study, car performance criteria had a negative effect on EV adoption in India, however infrastructural and financial considerations had a favorable effect.
15	Dhar (2024)	Analyzing factors influencing consumer perception and purchase intentions for	To evaluate the dynamic interplay of variables impacting consumer decisions in a market poised	Data analysis was conducted using descriptive statistics and multiple regression	This study discovered that adoption intention was significantly positively impacted by social image and performance anticipation, but not by environmental excitement, technological enthusiasm, social influence,

		electric vehicles in the Indian emerging market	for significant growth	techniques	or perceived advantages.
16	Pyakurel et al. (2025)	Factors driving consumer's purchase intention towards electric two-wheelers	To look at the Kathmandu Valley's consumers' intentions of purchasing electric two-wheelers	Hierarchical multiple regression was used to analyze the data	According to this study, social influence, perceived economic rewards, environmental concerns, and charging infrastructure significantly increased the likelihood that people would buy electric two-wheelers.

Source: Self Employed

2.3 Research Gap

The literature provided valuable insights for this study, offering empirical evidence for the variables and theoretical frameworks used to analyze customer perceptions. However, several gaps in information were identified, which this study sought to address. While substantial research exists in the automotive industry, there is a lack of focus on how consumers perceive electric vehicles. This study aims to fill that gap by examining customer views on electric cars. The current research differs from previous studies in terms of its objectives, analytical methods, and data collection timeframes. These differences are highlighted as a key feature, demonstrating how this investigation expands on and builds upon previous work. The primary aim is to draw meaningful conclusions about consumer perceptions of electric vehicles while considering existing research. Previous studies remain crucial, as they lay the groundwork for this current investigation. To ensure a comprehensive and efficient research process, a diverse range of sources, including books, journals, articles, and both published and unpublished dissertations, are consulted.

CHAPTER III
RESEARCH METHODOLOGY

The organized process of gathering, documenting, evaluating, interpreting, and reporting on different facets of the phenomena under study is known as research methodology. This study's methodology describes the procedures and methods used at every phase of the investigation. The target population and sample, sampling strategy, data kinds and sources, data collecting instruments, analytic techniques, study methodology, and definitions of important variables are all included.

3.1 Research Design

The study utilized both descriptive and causal research designs. Descriptive research design was employed to outline the characteristics and current status of consumer perceptions and purchase intentions regarding electric vehicles. On the other hand, causal research design was used to explore the relationship between the dependent variable (consumers' purchase intention) and the independent variables (environmental concern, cost benefits, technological concerns, social influence, and charging infrastructure). Additionally, the causal design was applied to assess how various factors impact the purchase intentions of consumers regarding electric vehicles in Nepal.

3.2 Population and Sample, and Sampling Design

The study's population includes all consumers of electric vehicle companies in the Kathmandu Valley. A total of 465 questionnaires were distributed, with 424 returned. However, only 400 responses were considered valid, making the sample size 400. The sampling method used in this study was non-probability sampling, specifically convenience sampling. This approach involved selecting participants based on their availability and willingness to participate, rather than using a random selection process.

3.3 Nature and Sources of Data, and Instruments of Data Collection

This study is based on primary data. Primary data is directly collected from respondents using structured surveys. This data collection method may yield specific

information relevant to the study's objectives, such as respondents' attitudes, opinions, and actions regarding their desire to buy an electric car in Nepal.

The questionnaire is systematically organized into three main parts. Section "A" highlights demographic information including gender, age, income level, and employment since it provides context for analyzing the sample's characteristics. Section "B." focuses on the study's primary issues, including societal impact, cost-benefit analysis, technology concerns, environmental concerns, and charging infrastructure. Each of these independent variables is assessed using five questions, and respondents are asked to rate their agreement or disagreement with each question on a scale of 1 (strongly disagree) to 5 (strongly agree). Section 'C' finally discusses the dependent variable, which is the desire to acquire an electric car. This section consists of five questions designed to gauge respondents' propensity to buy an electric car. Using a 5-point Likert scale, where 1 means "strongly disagree" and 5 means "strongly agree," the questionnaire. This scale helps determine the degree to which each assertion is accepted or rejected. Likert scale questions facilitate the quantification of respondents' perceptions and intents, hence enabling robust statistical analysis.

3.4 Method of Analysis

Both descriptive and inferential statistical approaches were used to examine the collected data in order to provide a comprehensive understanding of customer perception and purchase intention about electric automobiles. Descriptive statistics are used to assemble and display the respondents' demographic characteristics as well as their opinions and plans to buy electric vehicles. Using inferential statistics like correlation and multiple regression analyses, the relationships between the independent variables—such as environmental concern, cost benefit, technological concern, social influence, and charging infrastructure—and the intention of consumers to purchase an electric vehicle are examined. By illuminating the significance and effectiveness of each component in determining intention, these methodologies assisted in identifying the primary elements impacting customer perception and buy intention of electric cars.

3.4.1 Descriptive Analysis

Descriptive analysis was used to provide a summary of the key components of the collected data and to provide an overview of the traits and responses of the participants. This study employed a number of statistical methods to help understand the distribution, patterns, and trends of the data. The primary descriptive analytical techniques used are the mean, standard deviation, and frequency distribution.

Frequency Distribution

The percentage of respondents who fall into each group is determined using the frequency distribution for categorical data. This includes demographic information such as gender, age, income level, and employment, as well as responses to specific survey questions about customer perception and intention to buy electric vehicles. Frequency distribution allows the researcher to see patterns in the data by identifying the most common categories or responses. By making it evident how the population is split based on a number of factors, this approach made it possible to gain a more sophisticated knowledge of how consumers see and intend to buy electric vehicles.

Mean

The arithmetic average of a collection of data or quantities is represented by the mean, which is computed by dividing the total sum of values by the number of values. It is frequently employed to gauge the data's core trend. One common and simple way to measure central tendency is with the arithmetic mean. It is calculated by adding together all of the population's data points and dividing the sum by the total number of data points. The average responses of participants to the different variables in the Likert scale questions are determined in this study using the mean. For the Likert scale questions, the average response value for each sample is calculated.

$$\text{Mean } (\bar{X}) = \frac{\Sigma X}{n}$$

Where,

$\sum X$= Value of responses of each independent or dependent variable

n = No. of statements

Standard Deviation

The degree to which the values in a data collection vary or are distributed is indicated by the standard deviation, which quantifies the spread or dispersion of data. It is computed as the variance's square root. The standard deviation is simpler to read than variance since it is expressed in the same units as the data. Greater variability is shown by a bigger standard deviation, which denotes that the data points deviate more from the mean. The standard deviation rises with the dispersion of the data. Based on the answers to the Likert scale questions, the standard deviation is determined for every sample in this study.

$$\text{Standard Deviation (S.D.)} = \sqrt{\frac{\Sigma(X - \bar{X})^2}{n}}$$

Where,

X = Value of responses of each dependent or independent variable

$\bar{X}$ = Mean value of responses of each dependent or independent variable

n = No. of responses

3.4.2 Inferential Analysis

Version 26 of the Statistical Package for the Social Sciences (SPSS) was used to compute inferential analysis. Intricate statistical studies were made possible by this program, which also offered data on the connections and impacts of many factors on how consumers view and intend to buy electric vehicles. Correlations between variables are examined, and theories on consumer perception and intention to purchase electric vehicles are evaluated, using inferential analysis:

Correlation Analysis

The relationship between two independent variables is depicted by the correlation coefficient. It is a technique for figuring out the relationships between various variables. When two variables have a significant relationship—that is, when changes in one have an effect on the other—there is a correlation coefficient. Based on the Likert scale replies, correlation analysis is used in this study to evaluate the degree of association between the independent and dependent variables.

$$\text{Correlation Coefficient (r)} = \frac{n\Sigma XY - \Sigma X \Sigma Y}{\sqrt{n\Sigma X^2 - (\Sigma X)^2}\sqrt{n\Sigma Y^2 - (\Sigma Y)^2}}$$

Where,

X = Value of independent variable

Y = Value of dependent variable

n = Number of responses

Regression Analysis

A statistical method for assessing the kind and degree of the relationship between one or more independent variables and one or more dependent variables is regression analysis. It covers a range of techniques for examining and simulating numerous variables in order to comprehend how they relate to one another. Regression analysis is used in this study to ascertain the direction of the association between the independent and dependent variables for each sample by analyzing the responses on the Likert scale. The following equation represents the theoretical model of this relationship:

$PI = \beta_0 + \beta_1 EC + \beta_2 CB + \beta_3 TC + \beta_4 SI + \beta_5 CI + \varepsilon$

Where,

PI = Purchase Intention

EC = Environment Concern

CB = Cost Benefit

TC = Technological Concern

SI = Social Influence

CI = Charging Infrastructure

β_0 = The intercept (constant)

β_1, β_2, β_3 β_4 β_5 = Coefficient of variables

ε = Error term.

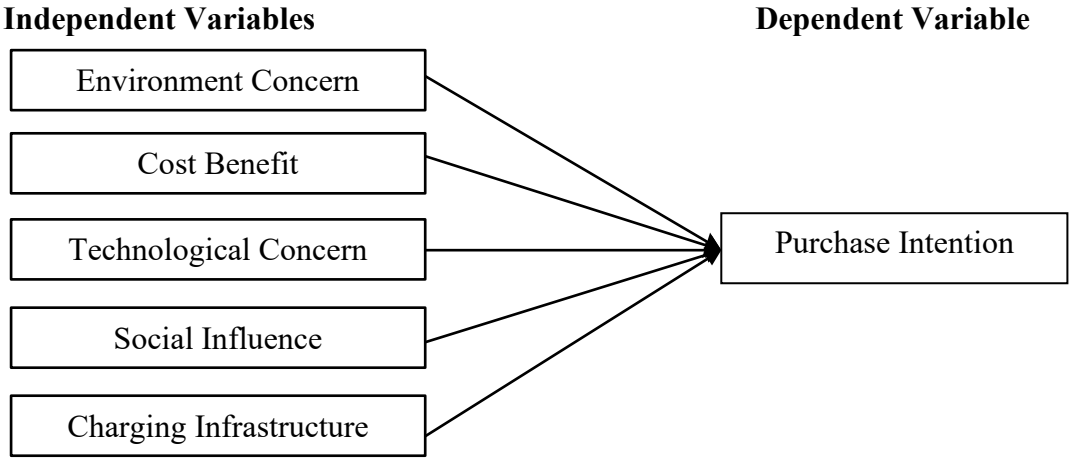
3.5 Research Framework and Definition of Variables

A conceptual framework is a graphic depiction of the expected correlations between variables, or the traits and attributes that the investigator plans to examine. This study's main objective is to investigate how consumers view and intend to buy electric automobiles. Purchase intention is the dependent variable, as previously mentioned in the literature review, and it can be impacted by a number of variables, including social influence, cost-benefit analysis, technology concerns, environmental concerns, and charging infrastructure. Sang and Bekhet (2015), Bhalla et al. (2018), and Pyakurel et

al. (2025) have examined a number of factors that impact consumers' intentions to acquire electric vehicles. These studies served as the basis for the development of the conceptual model that follows, which highlights the variables involved and delineates the primary emphasis and scope of the investigation.

Figure 1

Research Framework of the Study



Source: Sang and Bekhet (2015); Bhalla et al. (2018); Pyakurel et al. (2025)

Dependent Variable

Purchase Intention

Purchasing intention to use technology, according to Pandjaitan (2018), is the degree to which an individual has considered whether or not to engage in a specific behavior in the future. Finding out if consumers had positive or negative views regarding using EVs was the aim of this survey. This study's primary focus is on how consumers perceive and intend to buy electric vehicles. Other research, like those by Sang and Bekhet (2015), Bhalla et al. (2018), and Pyakurel et al. (2025), employed purchase intention as a dependent variable.

Independent Variables

Environment Concern

Concern for the environment reflects how customers view sustainability. People that care more about the environment are more inclined to use green technologies, including electric cars, according to a number of studies on sustainable transportation. This is supported by the Theory of Planned Behavior (TPB), which holds that pro-

environmental activities like buying e-bikes are significantly influenced by environmental concerns. According to Bhalla et al. (2018), perceptions regarding the buying of electric vehicles were influenced by environmental concerns. Similarly, Varghese et al. (2021) discovered that purchase intention for electric vehicles was significantly positively impacted by environmental considerations.

Cost Benefit

E-bikes' financial advantages over conventional cars are the main emphasis of perceived cost benefits. Consumer behavior is greatly impacted, particularly when expenses are low. One of e-bikes' financial benefits is that they require less upkeep and operation (Khurana, 2019). According to Bhalla, Ali, and Nazneen (2018), purchase intention was significantly positively impacted by cost or economic advantage. Additionally, Lashari, Ko and Jang (2021) discovered that cost-benefit had a noteworthy beneficial impact on purchase intention.

Technological Concern

According to the respondents' feedback, people trust technology and rely on it, but because it is evolving so swiftly, they may not be ready for it or may not know which technology to choose. Although individuals think that new technology is great and useful, adoption of it is going somewhat slowly, according to the conclusion. Bhalla, Ali, and Nazneen (2018) demonstrated that purchase intention for electric vehicles was significantly positively impacted by technological concern. Similar findings were made by Bhat, Verma, and Verma (2022), who discovered that technological worry significantly increases the intention to buy an electric vehicle.

Social Influence

Social influence considers the ways in which cultural norms, social networks, and peer pressure affect people's purchasing decisions. The adoption of e-bikes may be impacted by consumer views shaped by the endorsements of friends, family, or significant others. Bhat, Verma, and Verma (2022) and Bhalla, Ali, and Nazneen (2018) noted that social influence significantly increases purchasing intention. Meanwhile, Malladi, Rokkam, and Venkteshwar (2020) noted that purchasing intention was significantly positively impacted by social influence.

Charging Infrastructure

In order to lessen range anxiety, charging infrastructure highlights the necessity of easily accessible charging stations. It has been demonstrated that a robust charging infrastructure has a major impact on consumers' propensity to buy electric vehicles. According to research by Bhalla, Ali, and Nazneen (2018), charging infrastructure significantly increased the likelihood that people would buy an electric vehicle. According to Varghese, Abhilash, and Pillai (2021); Pyakurel et al. (2025), the intention to purchase an electric car was significantly positively impacted by charging infrastructure.

CHAPTER - IV
RESULTS AND DISCUSSION

This chapter presents the findings and analysis of the study on consumer perception and intention to buy electric vehicles. The data is organized and discussed using a variety of components, including demographic results, descriptive statistics, regression analysis, correlation analysis, hypothesis testing, and key findings. Section 4.1 presents the results of the statistical analysis, beginning with the demographic profile of the respondents and moving on to the descriptive statistics that give a summary of the data. The correlation study examines the relationships between charging infrastructure, social influence, cost-benefit analysis, technology concerns, environmental concerns, and customers' inclination to buy. Regression analysis is used to evaluate how independent factors affect the dependent variable. Hypothesis testing is done to confirm or refute the hypotheses that have been put forth. By analyzing these results in the context of the study's objectives and the corpus of prior research, the discussion section provides insights into the ways in which various factors influence consumers' perceptions and intentions to buy electric vehicles. When combined, these evaluations offer a comprehensive understanding of the many factors affecting the target consumer's impression and desire to buy.

4.1 Results

Key characteristics are emphasized in the findings section after a comprehensive analysis of the respondents' demographic profile. To find patterns and trends in the data, a thorough descriptive analysis is then conducted. Correlation analysis is then used to analyze the complex correlations between variables, offering insights into the dynamics among the subjects under study. Regression analysis, which also shows the impact and predictive components, helps us better grasp the study environment. This combination of descriptive subtleties, analytical depth, and demographic insights enhances the data and facilitates understanding the study's findings.

4.1.1 Respondents Demographic Profile

This section examines the demographic characteristics of the respondents, addressing significant factors such as gender, age group, monthly income, and profession level.

By completing these vital demographic gaps, the study was able to gather valuable information on the diverse personalities of the participants and give a sufficient grasp of the background for the ensuing analysis and interpretations. All of the respondents are from the Kathmandu Valley.

Table 2

Gender Specification

Options	No. of Respondents	Response (percent)
Male	264	66.00
Female	136	34.00
Total	400	100

Source: Opinion Survey, 2025

Table 2 shows the distribution of the respondents on the basis of gender. Data from 400 respondents is gathered and examined for this study. The bulk of responders are men, as evidenced by the fact that 66.0 percent of all replies were from men. Out of 400 respondents, men provide the majority of the responses, compared to women. However, 34.00 percent of women responded when asked how they felt about electric vehicles in Nepal. According to these findings, men are probably more likely than women to be EV consumers. In this regard, the Nepalese EV firm can determine that the primary survey participants are both male and female.

Table 3

Age Description of Respondents

Options	No. of Respondents	Response (percent)
Up to 25 years	60	15.00
26-35 years	84	21.00
36-45 years	156	39.00
45 and above	100	25.00
Total	400	100

Source: Opinion Survey, 2025

The respondents' ages are also broken out in Table 3. It reveals that the greatest age group, 39.00 percent, is between the ages of 36 and 45. The age group up to 25 years old makes up the least percentage of responders (15.00 percent). Furthermore, twenty-one percent of responders are between the ages of 26 and 35, and twenty-five percent are above 45. This suggests that the vast majority of EV buyers were elderly individuals who were considering purchasing an EV.

Table 4

Monthly Income

Options	No. of Respondents	Response (percent)
Up to Rs. 50,000	18	4.50
Rs. 51,000- Rs. 100,000	124	31.00
Rs. 101,000 -Rs.150000	160	40.00
Rs. 151,000 and above	98	24.50
Total	400	100

Source: Opinion Survey, 2025

The respondents' monthly income profile is displayed in Table 4. 40.00 percent of respondents make between Rs. 101,000 and Rs. 150000, according the report. The smallest proportion of respondents—just 4.50 percent—earn more than Rs. 50,000, placing them in the highest income bracket. However, the vast majority of those surveyed had middle incomes. Furthermore, 24.50 percent of respondents fall into the income band of Rs. 151,000 and above, while 31.00 percent reported earning between Rs. 51,000 and Rs. 100,000.

Table 5

Respondent Occupation Status

Options	No. of Respondents	Response (percent)
Employed	148	37.00
Self Employed	240	60.00
Student	12	3.00
Total	400	100

Source: Opinion Survey, 2025

Information on the occupation status of the respondents was also provided in Table 5. Sixty percent of the respondents work for themselves, thirty-seven percent are employed, and the remaining three percent are students.

4.1.2 Descriptive Analysis

In order to learn more about the respondents' opinions about customer perception and purchase intention of electric vehicles, this part looks at the descriptive data analysis. The mean and standard deviation were the main analytical methods utilized in the study to give a thorough analysis of the data gathered. While the mean displays the replies' central tendency and the typical point of view, the standard deviation shows the degree of variability and provides a comprehensive evaluation of the respondents'

overall opinions. The study uses these metrics to show the respondents' varied perspectives on how consumers view and intend to buy electric vehicles.

4.1.2.1 Summary of Descriptive Statistics

The mean and standard deviation of each variable are examined in order to determine how consumers see and intend to buy electric vehicles. The gathered data has been examined using descriptive analysis, which aids in its efficient summarization and description. Table 6 displays the findings of the descriptive analysis.

Table 6

Summary of Descriptive Analysis

Study Variables	N	Mean	Std. Deviation
Environment Concern (EC)	400	3.7790	.89508
Cost Benefit (CB)	400	3.8515	.76440
Technological Concern (TC)	400	3.8160	.77721
Social Influence (SI)	400	3.7860	.84912
Charging Infrastructure (CI)	400	3.6370	.80961
Purchase Intention (PI)	400	3.7415	.82485

Source: Appendix -I

According to the results presented in Table 6, the mean score for purchase intention is 3.7415, indicating a high level. This suggests that all factors related to electric vehicles in Nepal fall within a high range, with scores ranging from 3.6370 to 3.8515. Among these factors, the cost benefit received the highest mean score of 3.8515, surpassing the other elements such as environmental concern, technological concern, social influence, and charging infrastructure. This indicates that cost benefit is the most influential factor in this study, as evidenced by its highest mean score. In other words, it is clear that most respondents agreed that cost benefit plays a significant role in shaping their purchase intentions and that they perceive their purchase intentions to be high. On the other hand, the mean scores for environmental concern (EC), technological concern (TC), social influence (SI), and charging infrastructure (CI) were 3.7790, 3.8160, 3.7860, and 3.6370, respectively.

Regarding the standard deviation, the results indicate that all the variables had scores below 1.00, suggesting that there is little variation in respondents' opinions. The standard deviation for purchase intention, the dependent variable, was 0.82485. For the independent variables—environmental concern, cost benefit, technological

concern, social influence, and charging infrastructure—the standard deviations were 0.79373, 0.82139, 0.76286, respectively. Among all the variables, cost benefit had the lowest standard deviation.

4.1.2.2 Descriptive Statistics of Environment Concern

This section studies the influence of environment concern on purchasing intention of electric car in Nepal by descriptive analysis. In this study, environment concern comprises five assertions. A five-point Likert scale is used to measure the variable: One means strongly disagree, while five means firmly agree. The mean and standard deviation of the respondents' opinions are calculated. The mean value indicates the average state of the respondents' emotions, while the standard deviation displays the departure from the respondents' average mean. The information below illustrates how environmental concerns affect Nepalese consumers' intentions to buy electric vehicles.

Table 7

Environment Concern

Code	Scale Items of Environment Concern	Mean	Std. Dev.
EC1	I am aware of the environmental impacts of my transportation choices	3.7300	1.15778
EC2	My choice to buy a car is based on its environmental impact.	3.8650	1.06988
EC3	I want to purchase an electric car due to the ongoing air pollution crisis.	3.6850	1.14632
EC4	I am more likely to purchase on eco-friendly vehicle	3.8500	1.06317
EC5	I am concerned about conserving energy	3.7650	1.09900

Source: Appendix-I

Descriptive data of five distinct scale elements of consumer environmental concern for electric vehicles are displayed in Table 7. EC2, "My choice to buy a car is based on its environmental impact," earned the highest score mean (3.8650) out of all the scale items. The lowest mean, 3.6850, was found for scale item EC3, "I want to buy an electric car because of the ongoing air pollution crisis." It may be inferred that consumers are more inclined to acquire an automobile depending on its environmental effect. EC1 has the largest standard deviation (1.15778), which indicates the greatest variety in answers, while EC4 has the lowest (1.06317), which indicates the least variability.

4.1.2.3 Descriptive Statistics of Cost Benefit

This section uses descriptive analysis to examine how cost-benefit influences the intention to buy an electric vehicle in Nepal. The study includes five statements about cost-benefit, and the variable is measured on a five-point Likert scale, with 1 representing strongly disagree and 5 representing strongly agree. The mean and standard deviation of the respondents' opinions are calculated, and the mean value indicates the average state of the respondents' feelings, while the standard deviation indicates the deviation from the average mean of the respondents.

Table 8

Cost Benefit

Code	Scale Items of Cost Benefit	Mean	Std. Dev.
CB1	The initial cost of buying an electric vehicle is a major factor to buy	3.8500	1.02476
CB2	The cost of an electric vehicle significantly impacts my decision-making process.	3.8275	1.05381
CB3	Electric vehicles provide long-term savings on fuel and maintenance expenses	3.7600	1.00993
CB4	The cost benefits of owning an electric vehicle, such as reduced fuel and maintenance costs.	3.9099	.97173
CB5	I think, electric vehicles offer great value for the price	3.9100	.89661

Source: Appendix-I

Table 8 presents the descriptive statistics for five different scale items related to cost benefits of electric vehicles. Among these items, CB5, "I think electric vehicles offer great value for the price," had the highest mean score of 3.9100. On the other hand, CB3 had the lowest mean score at 3.7733. This suggests that customers generally perceive electric vehicles as offering good value for the price, with cost benefits like lower fuel and maintenance costs. In terms of standard deviation, CB2 had the highest value of 1.05381, indicating the greatest variation in responses, while CB5 had the lowest standard deviation of 0.89661, showing the least variability.

4.1.2.4 Descriptive Statistics of Technological Concern

This section analyzes the impact of technological concern on the purchase intention of electric vehicles in Nepal using descriptive analysis. Technological concern is assessed through five different statements, measured on a 5-point Likert scale ranging

from 1 (strongly disagree) to 5 (strongly agree). The respondents' opinions were evaluated by calculating the mean and standard deviation. The mean value reflects the average perception of the respondents, while the standard deviation indicates the degree of variation from the average mean.

Table 9

Technological Concern

Code	Scale Items of Technological Concern	Mean	Std. Dev.
TC1	I am concerned about the limited lifespan of electric vehicle batteries.	3.8000	1.05963
TC2	I believe electric vehicle technology will continue to improve	3.8600	.97096
TC3	I have confidence in the technology used in electric vehicles to perform well over time	3.9075	.98558
TC4	I believe electric vehicles will integrate with existing infrastructure	3.8275	.98497
TC5	I am concerned about the overall performance of electric vehicles	3.6850	1.05525

Source: Appendix-I

Table 9 presents the descriptive statistics for five different scale items related to technological concern towards electric vehicles. Among these items, TC3, "I have confidence in the technology used in electric vehicles to perform well over time," had the highest mean score of 3.9075. Conversely, TC5, "I am concerned about the overall performance of electric vehicles," had the lowest mean score of 3.6850. This indicates that customers generally have confidence in the technology used in electric vehicles and believe that the technology will continue to improve. In terms of standard deviation, TC1 had the highest value of 1.05963, showing the greatest variability in responses, while TC4 had the lowest value of 0.98497, indicating the least variability.

4.1.2.5 Descriptive Statistics of Social Influence

This section uses descriptive analysis to examine the state of social influence. The study's five statements measure social influence, which is measured on a five-point Likert scale from 1 (strongly disagree) to 5 (strongly agree). The mean and standard deviation of the respondents' opinions are calculated, and the mean value indicates the average state of the respondents' feelings, while the standard deviation indicates the deviation from the average mean of the respondents. The data below illustrates how social influence affects the intention of electric vehicle buyers in Nepal.

Table 10

Social Influence

Code	Scale Items of Social Influence	Mean	Std. Dev.
SI1	My family members encourage me to consider buying an electric vehicle	3.7400	1.02715
SI2	I am influenced by my friends to buy electric vehicles	3.7550	1.03084
SI3	I feel that purchasing an electric vehicle is becoming more socially acceptable	3.8150	1.01654
SI4	My personality would be reflected in an EV.	3.8400	.97816
SI5	Having EV builds up my social status	3.7800	1.08376

Source: Appendix-I

Table 10 presents the descriptive statistics for five different scale items related to social influence on respondents' attitudes towards electric vehicles. Among these items, SI4, "My personality would be reflected in an EV," had the highest mean score of 3.8400. On the other hand, SI1, "My family members encourage me to consider buying an electric vehicle," had the lowest mean score of 3.7400. This suggests that respondents believe their personality is reflected in their choice of electric vehicle and that purchasing an EV is increasingly viewed as socially acceptable. Regarding standard deviation, SI5 had the highest value of 1.08376, indicating the greatest variability in responses, while SI4 had the lowest value of 0.97816, showing the least variability.

4.1.2.6 Descriptive Statistics of Charging Infrastructure

This section uses descriptive analysis to illustrate the charging infrastructure. There are five distinct assertions in the charging infrastructure. A five-point Likert scale, ranging from 1-strongly disagree to 5-strongly agree, was used to measure this concept. The mean and standard deviation of the respondents' opinions were calculated. The standard deviation indicates the departure from the average mean of the respondents, whereas the mean value indicates the average state of the respondents' emotions. The information below illustrates how charging infrastructure affects Nepalese consumers' intentions to buy electric vehicles.

Table 11

Charging Infrastructure

Code	Scale Items of Charging Infrastructure	Mean	Std. Dev.
CI1	The locations of charging stations are convenient for me	3.5900	1.06052
CI2	Charging my electric vehicle is simple and hassle-free	3.7600	.99240
CI3	I trust that charging stations will be functional and available.	3.6375	1.01670
CI4	The charging speed of electric vehicle stations is fast enough for my needs	3.5475	1.08660
CI5	The cost of charging an electric vehicle at public stations is affordable	3.6500	1.04414

Source: Appendix-I

Table 11 presents the descriptive statistics for five different scale items related to charging infrastructure. Among these items, CI2, "Charging my electric vehicle is simple and hassle-free," had the highest mean score of 3.7600. In contrast, the lowest mean score was 3.8067 for CI4, "The charging speed of electric vehicle stations is fast enough for my needs," indicating that most customers were less in agreement with this statement compared to the others. This suggests that customers generally find charging their electric vehicles simple and hassle-free, and they believe the cost of charging at public stations is affordable. Regarding standard deviation, CI4 had the highest value of 1.08660, reflecting the greatest variability in responses, while CI2 had the lowest value of 0.99240, showing the least variability.

4.1.2.7 Descriptive Statistics of Purchase Intention

This section uses descriptive analysis to illustrate the state of buying intention. Four distinct assertions are included in purchase intention. A five-point Likert scale, ranging from 1 (strongly disagree) to 5 (strongly agree), was used to measure this concept. The mean and standard deviation of the respondents' opinions were calculated. The standard deviation indicates the departure from the average mean of the respondents, whereas the mean value indicates the average state of the respondents' emotions.

Table 12

Purchase Intention

Code	Scale Items of Purchase Intention	Mean	Std. Dev.
PI1	I am interested in buying an electric vehicle	3.6800	1.14055
PI2	I am likely to purchase an electric vehicle in the near future	3.7475	1.02781
PI3	I plan to buy an electric vehicle as my next car	3.7850	1.05192
PI4	My willingness to buy electric vehicle is very high	3.7225	1.13742
PI5	I would purchase an electric vehicle to contribute to environmental sustainability	3.7725	1.05998

Source: Appendix-I

Table 12 presents the individual scale items related to purchase intention. Among these items, PI3, "I plan to buy an electric vehicle as my next car," had the highest mean score of 3.7850. In contrast, PI1, "I am interested in buying an electric vehicle," had the lowest mean score of 3.6800. The study concludes that electric vehicle customers are planning to purchase an EV as their next car and view buying an electric vehicle as a way to contribute to environmental sustainability. Regarding standard deviation, PI1 had the highest value of 1.14055, indicating the most variation in responses, while PI2 had the lowest value of 1.02781, showing the least variability.

4.1.3 Correlation Analysis

To find out how people in Nepal felt about electric vehicles, correlation analysis was done. The dependent and independent variables, namely Nepal's desire to acquire an electric car, are shown in the following tables. Correlation analysis was used in this study to determine the connection between the variables. Using the SPSS software, the researcher determined the correlation coefficient value in this analysis. The general link between variables and the desire to buy an electric car was the main focus of the correlation study.

Table 13

Pearson Correlation Coefficients of Study Variables

	EC	CB	TC	SI	CI	PI
Environment Concern (EC)	1					
Cost Benefit (CB)	.566**	1				
	.000					
Technological Concern (TC)	.643**	.522**	1			
	.000	.000				
Social Influence (SI)	.468**	.408**	.700**	1		
	.000	.000	.000			
Charging Infrastructure (CI)	.686**	.464**	.447**	.368**	1	
	.000	.000	.000	.000		
Purchase Intention (PI)	.735**	.641**	.685**	.639**	.613**	1
	.000	.000	.000	.000	.000	

**. Correlation is significant at the 0.01 level (2-tailed).

Source: Appendix-II

Table 13 presents the results of the correlation test between the dependent and independent variables, using a correlation coefficient matrix. The analysis reveals a significant positive correlation between environmental concern and purchase intention, with a coefficient of 0.735. Similarly, the correlation between cost benefit and purchase intention is 0.641, with a significant value of 0.000, indicating a strong positive relationship ($P < 0.05$). Additionally, the correlation between technological concern and purchase intention is 0.685, with a significant value of 0.000, further confirming a significant positive association between technological concern and purchase intention ($P < 0.05$). Therefore, it is evident that there is a substantial positive connection ($P<0.05$) between social influence and purchase intention, as the correlation value between the two is 0.639 with a significant value of 0.000. It is evident that there is a substantial position link between charging infrastructure and purchase intention ($P<0.05$) based on the correlation value between the two, which is 0.613 with a significant value of 0.000.

4.1.4 Multiple Regression Analysis

It involves various techniques for modeling and analyzing multiple variables, with a focus on examining the relationship between the dependent variable (purchase intention of electric vehicle customers in Nepal) and the independent variables (environmental concern, cost benefit, technological concern, social influence, and charging infrastructure).

Table 14

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.844a	.712	.708	.44575

a. Predictors: (Constant), INF, TC, SI, EB, EC

Source: Appendix-III

The model indicated that five variables—environmental concern, cost-benefit analysis, technological worry, social impact, and charging infrastructure—predict purchase intention. The models' R2 score of 0.712 indicates that variations in the independent variables account for 71.20 percent of the observed variability in purchase intention. Since these variables are not included in the model, they did not explain the remaining 28.80% of the variance in purchase intention. Stated otherwise, the model is linearly fitted.

Table 15

Analysis of Variance (ANOVA)

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	193.186	5	38.637	194.455	.000b
	Residual	78.286	394	.199		
	Total	271.471	399			

a. Dependent Variable: EP
b. Predictors: (Constant), INF, TC, SI, EB, EC

Source: Appendix-III

The most likely combination of predictor factors that might influence the impact of dependent variables is explained by an analysis using ANOVA (F-value). The purchase intention indicator has a considerable influence, according to the results. The dependent variable (purchase intention) and the independent variables are clearly related, as evidenced by the F-values of 194.455 ($p = 0.000 < 0.05$) for environment concern, cost benefit, technological concern, social influence, and charging infrastructure as proxies for purchase intention.

Table 16

Regression Coefficient of Independent Variables on Purchase Intention

Variables	Coefficients	t-statistics	p-value
Constant	-.276	-1.996	.047
Environment Concern (EC)	.279	6.776	.000
Cost Benefit (CB)	.250	6.777	.000
Technological Concern (TC)	.123	2.607	.009
Social Influence (SI)	.260	7.025	.000
Charging Infrastructure (CI)	.150	3.925	.000

a. Dependent Variable: PI

Source: Appendix-III

Table 16 presents the regression coefficients for environmental concern, cost benefit, technological concern, social influence, and charging infrastructure, along with the intercept value for the dependent variable, purchase intention. The regression coefficient (β) for environmental concern is 0.279, indicating that for every one-unit increase in environmental concern, purchase intention increases by 0.279 units. The p-value for environmental concern is 0.000, showing that this effect is statistically significant at the 5 percent level. Therefore, environmental concern has a significant positive impact on purchase intention towards electric vehicles. Similarly, the regression coefficient (β) for cost benefit is 0.250, meaning that a one-unit change in cost benefit results in a 0.250-unit increase in purchase intention towards electric vehicles. The p-value for cost benefit is also 0.000, confirming its statistical significance at the 5 percent level. Thus, cost benefit has a significant positive effect on purchase intention.

Considering a regression coefficient (β) of 0.123 for technical be concerned purchase intention rises by 0.123 units for every unit increase in technological concern. At the five percent level, this association is statistically significant, as indicated by the p-value of 0.009 for technological concern. Consequently, purchasing intention for electric vehicles is significantly positively impacted by technology worry. The social influence regression coefficient (β) is 0.260, indicating that a 0.260-unit increase in purchase intention follows a one-unit rise in social influence. At the five percent level, social influence's statistical significance is confirmed by its p-value of 0.000. Consequently, purchasing intention has been substantially benefited by social influence. Last but not least, the charging infrastructure regression coefficient (β) is 0.150, meaning that for every unit increase in charging infrastructure, the purchase

intention increases by 0.150 units. At the five percent level, the charging infrastructure p-value is 0.000, indicating statistical significance. Therefore, the desire to buy an electric car is significantly positively impacted by charging infrastructure.

4.1.5 Results of Hypothesis

This section presents the findings of the hypothesis testing based on regression analysis. The objective of the hypothesis is to assess the relationships between the dependent variable, purchase intention, and the independent variables, including environmental concern, cost benefit, technological concern, social influence, and charging infrastructure.

Table 14

Hypothesis Test

S.N.	Hypotheses	P-Value	Test Results
1	H1: There is positive effect of environment concern on consumers' purchase intention to EV in Nepal.	0.000	Supported
2	H2: There is positive effect of cost benefit on consumers' purchase intention to EV in Nepal.	0.000	Supported
3	H3: There is positive effect of technological concern on consumers' purchase intention to EV in Nepal.	0.009	Supported
4	H4: There is positive effect of social influence on consumers' purchase intention to EV in Nepal.	0.000	Supported
5	H5: There is positive effect of charging infrastructure availability on consumers' purchase intention to EV in Nepal.	0.000	Supported

4.2 Discussion

The primary aim of this study is to understand consumer perceptions and purchase intentions regarding electric vehicles. The study focuses on various factors such as environmental concern, cost benefit, technological concern, social influence, and charging infrastructure. It also explores the connection between these factors and purchase intention. Previous research and literature support the link between environmental concern, cost benefit, technological concern, social influence, and charging infrastructure with purchase intention. The literature confirms that these factors have a direct influence on purchase intention.

The correlation analysis reveals that environmental concern has a positive and significant relationship with the intention to purchase electric vehicles. This finding aligns with previous studies by Lai et al. (2015) and Varghese, Abhilash, and Pillai (2021), who also identified a positive link between environmental concern and purchase intention. It is further supported by the findings of Wang et al. (2016), Bhalla, Ali, and Nazneen (2018), and Lashari, Ko, and Jang (2021). Similarly, cost benefit is positively and significantly related to purchase intention, consistent with Lai et al. (2015), who observed a significant relationship between cost benefit and purchase intention. This result is also supported by Bhalla, Ali, and Nazneen (2018), Lashari, Ko, and Jang (2021), and Malladi, Rokkam, and Venkateshwar (2020). Additionally, technological concern shows a positive and significant relationship with purchase intention, which aligns with the findings of Bhalla, Ali, and Nazneen (2018), who reported a similar positive relationship, as well as those of Lashari, Ko and Jang (2021).

The analysis also shows a positive and significant relationship between social influence benefit and purchase intention. This finding is similar to the study by Bhalla, Ali, and Nazneen (2018), who concluded that social structure positively and significantly impacts purchase intention. The result is further supported by Lashari, Ko, and Jang (2021) and Malladi, Rokkam, and Venkateshwar (2020). Finally, charging infrastructure is positively and significantly related to purchase intention towards electric vehicles. This result is consistent with Bhalla, Ali, and Nazneen (2018), who observed a positive relationship between charging infrastructure and purchase intention, as well as with the findings of Shandilya and Skotte (2021) and Varghese, Abhilash, and Pillai (2021).

The multiple regression analysis reveals that environmental concern has a significant positive effect on the intention to purchase electric vehicles. This finding aligns with Lai et al. (2015) and is also consistent with studies by Wang et al. (2016), Bhalla, Ali, and Nazneen (2018), Varghese, Abhilash, and Pillai (2021), Bhat, Verma, and Verma (2022), and Yegin and Ikram (2022). Similarly, cost benefit has a significant positive impact on the intention to purchase electric vehicles. This result is in line with previous research by Lai et al. (2015) and Bhat, Verma, and Verma (2022). Additionally, Bhalla, Ali, and Nazneen (2018) found that cost benefit had a

significant positive effect on purchase intention. The findings also align with those of Lashari, Ko, and Jang (2021) and Malladi, Rokkam, and Venkateshwar (2020).

The analysis also shows that technological concern has a significant positive impact on the intention to purchase electric vehicles, which is consistent with the findings of Bhalla, Ali, and Nazneen (2018) and Bhat, Verma, and Verma (2022). Additionally, social influence has a significant positive effect on purchase intention. This result aligns with the studies of Bhalla, Ali, and Nazneen (2018) and Bhat, Verma, and Verma (2022). It is also in line with the research by Malladi, Rokkam, and Venkteshwar (2020), who found that social influence positively impacts purchase intention, as well as with the findings of Bhalla, Ali, and Nazneen (2018) and Lashari, Ko, and Jang (2021). Lastly, charging infrastructure is shown to have a significant positive impact on the intention to purchase electric vehicles. This result is consistent with the studies by Bhalla, Ali, and Nazneen (2018) and Varghese, Abhilash, and Pillai (2021), as well as with the prior research by Shandilya and Skotte (2021).

CHAPTER – V
SUMMARY AND CONCLUSION

5.1 Summary

A vehicle that runs on at least one electric engine or foothold engine is called an electric vehicle (EV). The word "EV" is often used to refer to an electric vehicle. The client's initial impression of an item is known as people perception. People's perceptions will influence their decision to choose or reject a brand. Generally speaking, a client will form an opinion when they believe that their attractive things are delivered on time. In addition to helping to lessen the import of fuel goods, EV transportation will help to ameliorate the environmental issues posed by ICE automobiles. In addition to identifying benefits and obstacles to consumer acceptance, the study seeks to ascertain attitudes, behavioral intentions, and views about the widespread use of electric cars. Understanding a developing EV culture, reviewing legislative responses to meet EV adoption issues, identifying possible barriers to EV adoption, and determining the impact of sustainability on EV purchasing decisions are the other objectives.

The study's main goal is to find out how consumers feel about and plan to buy electric automobiles. The specific goals of this study are to investigate how consumers' intentions to buy electric vehicles are influenced by various factors, including cost, benefit, social influence, technology, and charging infrastructure, and to assess the impact of these factors on consumers' intentions to buy electric vehicles in Nepal. Descriptive and causal research designs were used in the study. Descriptive research design is used to characterize the features and state of customer perception and purchase intention of electric cars. The link and impact between the independent variables (environment concern, cost benefit, technology worry, social influence, and charging infrastructure) and dependent variable (consumers' purchase intention) may also be ascertained through the use of causal study design. Every EV user in the Kathmandu Valley is included in the study's population. Incorporating the whole population within the research is very difficult. As a result, only 400 individuals have been selected as a sample for the research from this group. SPSS version 26 is used in this study to apply multiple regressions, correlation analysis, and descriptive analysis. Purchase intention was the dependent variable in this study, along with cost-benefit

analysis, social impact, technological concerns, environmental concerns, and charging infrastructure.

Based to this survey, consumers feel that their purchase intention for electric vehicles is strong and that cost-benefit and technology concerns have a significant impact on it. According to the correlation research, buying intention is significantly positively correlated with both cost benefit and environmental concern. In addition, there is a strong positive correlation between purchase intention and technology concern. Likewise, there is a considerable positive association between social influence and purchasing intention. Furthermore, there is a strong positive association between the intention to buy and the charging infrastructure. Regression study demonstrates that cost benefit and environmental concern have a substantial beneficial impact on purchase intention. Then, technical concern has a major favorable impact on buying intention as well. In the meanwhile, purchasing intention is significantly positively impacted by social influence. Lastly, buying intention is very positively impacted by charging infrastructure. Nonetheless, every element significantly affects Nepalese consumers' intentions to buy electric vehicles.

5.2 Conclusion

It can be concluded that customers believe the factors of cost, benefit, and technology significantly influence their intention to purchase an electric vehicle, and they also feel that their intention to buy is strong.

The correlation analysis showed that environmental concern and cost-benefit have a strong positive relationship with purchase intention. Additionally, there is a significant positive link between technological concern and purchase intention. Likewise, the correlation between social influence and purchase intention is positively significant. Furthermore, the correlation between charging infrastructure and purchase intention is also positively significant.

The multiple regression analysis found a significant positive effect of environmental concern and cost-benefit on purchase intention. It also revealed a significant positive effect of technological concern on the intention to purchase electric vehicles. Additionally, social influence was found to have a significant positive impact on

purchase intention. Lastly, charging infrastructure also showed a significant positive effect on purchase intention. Therefore, all of these factors play a crucial role in influencing purchase intention toward electric vehicles in Nepal due to their significant impact.

5.3 Implications

The following conclusions and implications are drawn from the summary and conclusion above:

i. The findings revealed that environmental concern, cost-benefit, technological concern, social influence, and charging infrastructure have a significantly positive impact on purchase intention toward electric vehicles in Nepal. These results offer policymakers valuable insights into the factors that are likely to influence purchase intention in the automobile sector, helping to attract and retain more customers.
ii. By understanding the elements that influence buy intention, managers of the organization may create more effective tactics to increase purchase intention for electric vehicles.
iii. This study can provide some of the most recent facts, information, and difficulties pertaining to the intention to acquire an electric car. This study is therefore important to owners and shareholders.
iv. This study offers a clear conceptual understanding and information about how electric vehicles are perceived in Nepal. Therefore, this paper may potentially be used as a source for future researchers.

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