Established by INASP in 2007. Managed by Tribhuvan University Central Library.

Ganeshman Darpan

A Peer-Reviewed, Open Access Journal

Factors Driving Consumers' Purchase Intention Towards Electric Two-Wheelers

Osica Basnet [a] *

[a] GaneshmanSingh Multiple Campus

Article Info

Received: January 04, 2026
Accepted: March 15, 2026
Published: May 18, 2026

DOI: https://doi.org/10.3126/gd.v11i1.95235

Keywords: *Electric, adoption, change infrastructure, e-bike*

Abstract

In the Kathmandu Valley, Nepal, an area that suffers from extreme air pollution from traditional fuel-powered vehicles, this dissertation explores the factors influencing consumer purchase intentions toward electric two-wheelers, or e-bikes. The study's main goal is to investigate how consumers' decisions to purchase electric two-wheelers are influenced by social influence, perceived economic benefits, charging infrastructure, and environmental concerns. A systematic questionnaire was used to gather data from 379 respondents who were from the districts of Kathmandu, Lalitpur, and Bhaktapur. To investigate the connections between the important variables, the study used both descriptive and inferential statistical techniques, such as regression and correlation analysis. The findings reveal that environmental concern and perceived economic benefit are significant drivers of purchase intention, with respondents more likely to adopt e-bikes if they recognize their environmental and cost-saving advantages. Charging infrastructure, while important, remains a major barrier to adoption due to concerns about the availability and reliability of charging stations. Social influence plays a moderate role in shaping purchase intentions, with peer pressure and media exposure contributing to the decision-making process, though not as strongly as the environmental and economic factors. The study concludes that a combination of infrastructural improvements, public awareness campaigns, and financial incentives is necessary to boost e-bike adoption in Kathmandu Valley. Recommendations for policymakers and manufacturers include focusing on expanding charging infrastructure and making e-bikes more affordable to overcome the barriers identified in the research.

Introduction

Emissions from conventional fuel-powered automobiles are a major contributor to the growing air pollution crisis in large urban areas in emerging nations. There is an immediate threat to public health because studies have repeatedly demonstrated a clear correlation between car emissions and an increase in respiratory ailments (Karunarathna & Jayasinghe, 2023). Since the Sustainable Development Goals (SDGs) of the UN place a strong emphasis on environmental sustainability, cutting emissions and promoting green alternatives have gained international attention. In this regard, electronic two-wheelers, or e-bikes, have become a viable option for environmentally friendly urban transportation, particularly in areas where air quality is quickly declining.

Electric two-wheelers offer several advantages over traditional gasoline-powered motorcycles and scooters. These include zero tailpipe emissions, which directly reduce air pollutants, improved energy efficiency, and significantly lower long-term operating costs due to reduced fuel and maintenance expenses (Sheng et al., 2016). Governments and policymakers around the world, including Nepal, are beginning to recognize the potential of electric mobility and are

* Corresponding author.
E-mail addresses: osicabasnet@gmail.com

pursuing supportive policies such as subsidies, tax relief, and awareness campaigns to drive adoption. Nonetheless, despite these benefits and incentives, the uptake of e-bikes remains relatively low in many areas, including Kathmandu Valley.Despite the obvious economic and environmental advantages, the adoption rate of electric two-wheelers in Nepal, and especially in Kathmandu, has fallen short of expectations. People's health is still seriously at risk due to the ongoing air pollution caused by fossil fuel-powered automobiles. Important obstacles have been identified by earlier research, including high upfront expenditures, a dearth of infrastructure for charging, and little public awareness. Nevertheless, these studies frequently neglect to place these impediments in the context of Kathmandu's distinct socioeconomic, cultural, and infrastructure environment, which leads to a limited comprehension of how these elements interact to affect consumer behavior.

Moreover, much of the existing literature focuses broadly on technological and economic drivers of electric vehicle adoption, without fully addressing the specific behavioral, cultural, and infrastructural dynamics of Kathmandu Valley. The neglect of local consumer perceptions and socio-cultural variables weakens the effectiveness of proposed interventions. Social influence, lifestyle trends, and access to reliable service infrastructure are all critical yet underexplored elements affecting consumer purchase intention. This study aims to bridge that gap by closely examining the specific motivators and barriers to e-bike adoption within the Kathmandu Valley, offering localized insights that can inform more effective policy and marketing strategies.

This study uses the Theory of Planned Behavior (TPB) as a framework to better explain consumer behavior in this situation. TPB aids in the analysis of how attitudes, perceived behavioral control, and subjective norms affect consumers' intentions to make purchases. Through the integration of this framework, the study examines the ways in which social influences, economic considerations, environmental consciousness, and the availability of charging infrastructure impact the decision to use electric two-wheelers. In order to inform policies targeted at encouraging healthy urban living, increasing sustainable transportation options, and improving air quality in the Kathmandu Valley, this research is both urgent and essential.

Objective of the Study

This study's goal is to investigate and evaluate the main determinants of customers' intents to buy electric two-wheelers in the Kathmandu Valley, with an emphasis on social impact, economic considerations, environmental consciousness, and infrastructure support. In light of Nepal's distinct sociocultural and economic background, the study intends to comprehend how attitudes, subjective norms, and perceived behavioral control influence consumer selections by utilizing the Theory of Planned Behavior (TPB).

Hypothesis

i. **H1:** Environmental concern positively influences the purchase intention of electric two-wheelers in Kathmandu Valley.
ii. **H2:** Perceived economic benefit positively influences the purchase intention of electric two-wheelers in Kathmandu Valley.
iii. **H3:** Charging infrastructure positively influences the purchase intention of electric two-wheelers in Kathmandu Valley.
iv. **H4:** Social influence positively affects the purchase intention of electric two-wheelers in Kathmandu Valley.

Empirical Review

Dongol and Dangol (2025)distributed to selected customers within the region. A nonprobability convenience sampling method was employed, with 82 questionnaires distributed and 50 completed responses returned, yielding a response rate of 60.97%. The data collected were analyzed using descriptive statistics, utilizing SPSS software to generate frequency distributions, means, standard deviations, and visual representations such as graphs and pie charts. The demographic analysis of respondents revealed that 64% were female, with the majority aged between 21-25 years (42% used a quantitative research technique to examine the factors impacting the purchasing decisions of consumers in the Kathmandu Valley about electric two-wheelers. According to the demographic study of the respondents, 42% of them were between the ages of 21 and 25, and 64% of them were female. 36% of respondents were students, and the majority (30%) had finished intermediate (+2) education. The majority (30%) earned between Rs 100,000 and Rs 300,000, while income levels varied. According to the study, there was the greatest degree of consistency between

consumer behavior and education, with education having a low standard deviation of 0.611 and a mean of 3.724. With a mean of 3.016 and a standard deviation of 0.537, consumer behavior showed the least variation among respondents. With substantial regularity in educational background and consumer behavior patterns, the data indicates moderate consistency across the majority of demographic characteristics.

Saleh (2025) investigated the unique strategy by combining consumer experience variables—namely, customer experience and technology discomfort—with variables from the Technology Acceptance Model (TAM), specifically perceived utility and perceived ease of use. The findings showed that while perceived usefulness had no significant impact on customer experience, perceived usefulness, perceived simplicity of use, and customer experience all strongly influenced intention to buy. The association between perceived utility and purchase intention was not mediated by customer experience, but it was by perceived simplicity of use. Additionally, even though it had no discernible effect on customer experience, uneasiness with technology had a negative impact on perceived usefulness and ease of use.
Kamala and Thaiyalnayaki (2025) examined the relationship between various forms of Information and individuals' satisfaction with two-wheelers in Chennai. Modern consumers are exposed to a wide range of information sources, including word-of-mouth, commercials, online reviews, and dealership interactions. The results show how important it is for two-wheeler companies to use focused marketing techniques to improve customer satisfaction and identify important aspects. The article ends with recommendations on how businesses might better use information sources to increase client loyalty and happiness.

Pyakurel et al. (2025)perceived economic benefits, social influence, and charging infrastructure. Data were collected from 400 respondents through a structured questionnaire survey, and hierarchical multiple regression was used for the causal analysis. Results indicate that environmental concerns are a strong motivator for adopting e-bikes, highlighting the potential for leveraging environmental benefits in marketing strategies. Perceived economic benefits also play a crucial role, suggesting that financial incentives could enhance e-bike appeal. Social influence emerged as a powerful factor, indicating that endorsements from peers and social networks can significantly shape purchase intentions. Despite these positive influences, high initial costs and inadequate charging infrastructure remain significant barriers. The study suggests that addressing these barriers through targeted interventions such as subsidies, improved charging infrastructure, and public awareness campaigns, is essential for promoting e-bike adoption. The findings provide valuable insights for policymakers and industry stakeholders to design strategies that support the transition to sustainable transportation, contributing to a cleaner environment and improved public health in Kathmandu Valley.","container-title":"The Batuk","DOI":"10.3126/batuk.v11i1.74438","ISSN":"2565-4934","issue":"1","langu age":"en","license":"Copyright (c examined the Kathmandu Valley's consumers' intents to buy electric two-wheelers. The findings show that e-bike adoption is strongly influenced by environmental concerns, underscoring the possibility of utilizing environmental advantages in marketing tactics. Another important factor is perceived economic benefits, which implies that financial incentives may increase the popularity of e-bikes. Peer and social network endorsements have been shown to have a considerable impact on purchase intentions, making social influence a potent element. High upfront prices and insufficient charging infrastructure continue to be major obstacles in spite of these beneficial effects.
Agnes and Venkatesakumar (2025) assessed Indian consumers' propensity to buy electric bikes, especially in light of the growing competition among Indian automakers introducing electric two-wheelers in 2024. These findings suggest that while sustainability is a growing concern, consumers are more motivated by their trust in brands and readiness to adopt new technologies, providing critical insights for manufacturers to strengthen brand trust and enhance consumer education about electric bikes.

Pramono et al. (2025)offering a means to reduce energy consumption and CO2 emissions. This study develops a model of electric motorcycle adoption intention based on the Theory of Planned Behavior (TPB determined the elements affecting consumers' plans to purchase electric motorcycles. The results show that customer attitudes regarding electric motorbikes are significantly positively impacted by perceived economic benefits, social influence, brand awareness, and environmental concerns. Government regulations, however, have no effect on Indonesian consumers' opinions or desire to buy electric motorcycles. Furthermore, there is a negative association between attitudes and perceived risk, suggesting that issues like battery life problems, poor charging infrastructure, and limited range have a negative impact on user perceptions. Purchase intentions, on the other hand, were found to be significantly positively impacted by consumer sentiments.

Clarita and Chalid (2024)but it represents only a small fraction of the total new vehicles sold globally. This study aims to analyze the factors influencing consumer purchase intentions towards electric cars in the Greater Jakarta

area (Jabodetabek investigated the variables affecting consumers' willingness to buy electric vehicles in the Greater Jakarta region (Jabodetabek). The findings show that purchase intentions for electric automobiles are strongly and favorably influenced by government incentives, the ease of access to charging infrastructure, perceptions of resale value, product diversification, social impact, environmental concern, and consumer attitudes. Nevertheless, there was no discernible impact on the perception of the purchasing price. According to the findings, encouraging the adoption of electric cars in Jabodetabek requires strategic actions from manufacturers and policymakers, including ongoing government incentives, the development of charging infrastructure, and successful marketing campaigns that capitalize on social influence and environmental advantages.

Meliana and Pangaribuan (2024) Using the Theory of Planned Behavior approach, the study examined how attitudes, subjective norms, price value, incentives, perceived behavioral control, and environmental concerns affected the Jabodetabek area's inclinations to buy electric automobiles. Both the inner and outside models are tested as part of the tests. Incentives have a significant impact on attitude but not on purchase intention, price value has a significant impact on attitude but not on purchase intention, attitude and perceived behavioral control have a significant impact but subjective norms have no significant impact on purchase intention, and test results indicate that environmental concern has no significant effect on attitude and purchase intention. The impact of price value and incentives on purchase intention was successfully mediated by attitude. The relationship between environmental concern and buying intention is not substantially mediated by attitude.

Susanto and Rahmayanti (2024) determined the key elements influencing the decision to adopt electric vehicles and how to make them better. Organizational culture, environmental concern, and regulatory knowledge were the three key elements that raised the intention to use electric vehicles, according to the study's findings. This outcome showed a significant link between these parameters. It was discovered that intents for electric vehicles are positively and significantly impacted by organizational culture, environmental concerns, and regulatory awareness. Environmental concerns act as a mediating factor in the favorable relationship between company culture and the intention to drive an electric vehicle.

Saleh et al. (2024) investigated the connection between customers' experiences with intention to purchase an electric vehicle and perceived utility and simplicity of usage. The findings demonstrate the significance of each of the five hypotheses put forth. This indicates that three key factors that might greatly affect consumers' intentions to purchase an electric vehicle are perceived utility, perceived ease of use, and customer experience. Companies and regulators can better understand consumer behavior when it comes to buying electric vehicles thanks to the information this research provides.

Kariathi and Mayasari (2024) assessed the impact of perceived behavioral control, subjective norms, and environmental concerns on consumer attitudes regarding their intention to purchase an electric motorcycle. Subjective norm, perceived behavioral control, and environmental concern all have a substantial impact on consumer attitudes regarding their intention to purchase electric motorcycles, according to the research findings. It is critical to take these things into account and create a comprehensive plan to encourage electric motorcycle purchases. Nagarkar et al. (2024) investigated the factors influencing Indian consumers' propensity to buy electric two-wheelers. The findings of the exploratory factor analysis showed that there are four different factors influencing decisions to buy electric vehicles: "Technical factors and infrastructure," "Environmental benefits and government incentives," "Brand and Attaining Top Speed," and "Brand and Attaining Top Speed." Of these four factors, "Brand and Attaining Top Speed" has no effect on adoption. The report will assist various public and private organizations in promoting and positioning E-TWs in India in an efficient manner.

Karpurapu et al. (2024) examined the ETW environment in India, paying particular attention to pricing dynamics, behavioral objectives, personal inventiveness, and supportive factors. The results emphasize how price and facilitating factors have a major influence on behavioral intentions, and how personal innovativeness plays a crucial mediating role in this relationship. Additionally, this study emphasizes how crucial it is for ETW companies to give user-friendly designs top priority in order to guarantee a smooth and joyful customer experience. Additionally, it becomes clear that companies must strategically target highly innovative consumers when creating successful marketing plans. This study adds significant insights to the body of literature by illuminating enabling factors, price dynamics, individual innovation, and behavioral intents. In terms of environmental sustainability, electric two-wheelers' scalability helps to mitigate air pollution in cities and lower greenhouse gas emissions. As more people convert to electric two-wheelers from gasoline-powered cars, the combined effect of lowering carbon emissions and enhancing air quality grows, particularly in areas

with high population densities where pollution from transportation is a big issue.

Karunarathna and Jayasinghe (2023) studied the factors influencing consumers' propensity to purchase electric two-wheelers (E2Ws), given that demand for these vehicles is growing but their global sales share is still low. According to the results, consumers' attitudes are greatly influenced by social influence, perceived economic gain, charging infrastructure, and environmental concern. Perceived economic benefit is the best predictor of consumers' intention to buy E2Ws. The findings also show that women are more likely than males to use E2Ws, which provides useful information for manufacturers and governments looking to hasten the adoption of electric vehicles.

Saputra and Andajani (2023) examined how the intention to adopt battery electric cars (BEVs) was influenced by attitudes, subjective norms, perceptions of behavioral control, moral norms, environmental awareness, financial incentive policies, and risk perceptions. According to findings derived from a sample of 224 respondents, attitudes and subjective norms had no discernible impact on the intentions of BEV adoption. On the other hand, perceived dangers have a negative and substantial impact on intentions to use battery electric cars (BEVs), but perceived behavioral controls, moral norms, environmental concerns, and financial incentives have a positive and significant impact on desire to embrace BEVs.

Mei Tung and Ho (2021)because they are relatively inexpensive and convenient. Although electric scooters have entered the market with an emphasis on environmental responsibility, their market penetration is still low, and there has been little research on this topic. This study attempts to explore university students' intent to use electric scooters by using the theory of planned behavior and supplemented with environmental awareness variable in Taiwan. Overall, 500 questionnaires were collected and analyzed using the structure equation model. The results show that environmental awareness has a significant effect on students' attitudes, subjective norms, and perceived behavioral control. Attitude is the strongest predictor of the intent to use electric scooters. The results provide guidance for companies and policy makers to refine further strategy on the marketing of electric scooters.",",container-title":"Journal of Business and Management Sciences","DOI":"10.12691/jbms-9-4-2","ISSN":"2333-4495","issue":"4","journalAbbreviation":"J BMS","page":"156-164","source":"Semantic Scholar","title":"The Influence of Environmental Awareness on Intent to Use Electric Scooters: Perspectives Based on the Theory of Planned Behavior","title-short":"The Influence of Environmental Awareness on Intent to Use Electric Scooters","volume":"9","author":[{"family":"Mei Tung","given":"Cheng"},{"family":"Ho","given":"Shu-Hsun"}],"issued":{"date-parts":[["2021",11,19]]}}},"schema":"https://github.com/citation-style-language/schema/raw/master/csl-citation.json"} studied Taiwanese university students' intention to adopt electric scooters by combining the environmental awareness variable with the idea of planned behavior. The structure equation model was used to evaluate a total of 500 questionnaires. The findings demonstrate that students' attitudes, subjective norms, and perceived behavioral control are all significantly impacted by environmental awareness. The best indicator of a person's intention to utilize an electric scooter is their attitude. The findings give businesses and policymakers direction for improving their marketing strategies for electric scooters.

Patil et al. (2021)an investigation on prospective users' choice decisions is necessary. This paper proposed a comprehensive methodology to evaluate the prospective users' choice decision toward electric two-wheelers and related attributes in the Indian context. In this paper, attributes such as Operating Cost (OC assessed the decision made by potential users in the Indian setting regarding electric two-wheelers and associated features. The relative impact of the attributes on a person's decision-making process was then estimated by a sensitivity analysis, which measured the change in the likelihood of selecting alternatives with higher attribute levels than the base alternative. According to the findings, top speed was thought to be the most crucial factor affecting a person's decision, followed by acceleration and charging time. In the Indian setting, a person's impression of E2W and related traits was greatly influenced by their age, wealth, and travel time.

Research Methodology

The descriptive research design used in this study is ideal for examining and elucidating the variables affecting consumers' intentions to buy electric two-wheelers in the Kathmandu Valley. 379 respondents in the Kathmandu Valley were given standardized questionnaires as part of the data collection process, which also covers the population and sampling strategy. The study examines the relationship between a number of parameters (economic rewards, social impact, charging infrastructure, and environmental concern) and customer purchase intention using both descriptive and inferential statistical approaches, such as regression and correlation analysis. The study framework and the specification of important variables are also presented in this chapter.

Research Framework

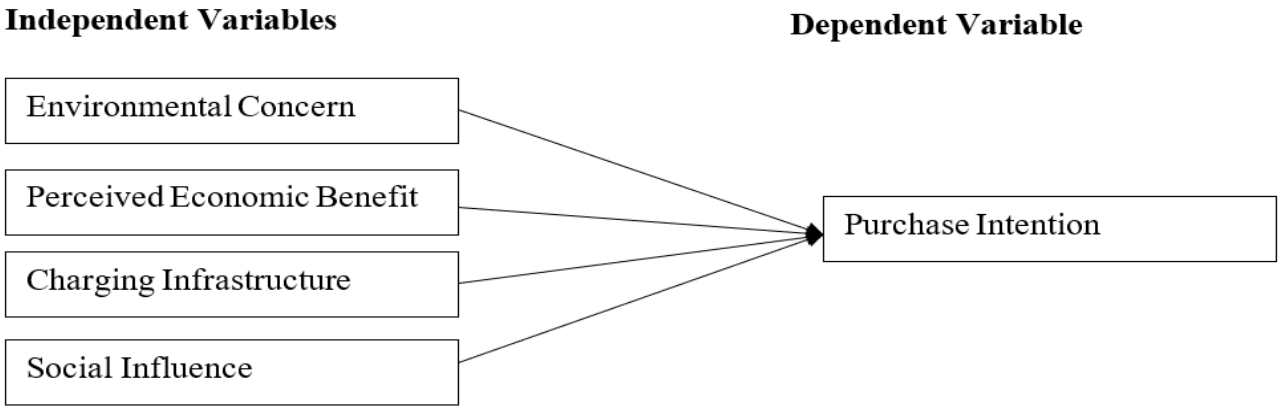

Figure 1: Theoretical Framework for Investors

Source: (Pyakurel et al., 2025)perceived economic benefits, social influence, and charging infrastructure. Data were collected from 400 respondents through a structured questionnaire survey, and hierarchical multiple regression was used for the causal analysis. Results indicate that environmental concerns are a strong motivator for adopting e-bikes, highlighting the potential for leveraging environmental benefits in marketing strategies. Perceived economic benefits also play a crucial role, suggesting that financial incentives could enhance e-bike appeal. Social influence emerged as a powerful factor, indicating that endorsements from peers and social networks can significantly shape purchase intentions. Despite these positive influences, high initial costs and inadequate charging infrastructure remain significant barriers. The study suggests that addressing these barriers through targeted interventions such as subsidies, improved charging infrastructure, and public awareness campaigns, is essential for promoting e-bike adoption. The findings provide valuable insights for policymakers and industry stakeholders to design strategies that support the transition to sustainable transportation, contributing to a cleaner environment and improved public health in Kathmandu Valley.","container-title":"The Batuk","DOI":"10.3126/batuk.v11i1.74438","ISSN":"2565-4934","issue":"1","language":"en","license":"Copyright (c

Result and Discussion

Table 1

Summary of the Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation
EC	379	1.00	5.00	3.5594	.95731
PEB	379	1.00	5.00	3.3153	.93321
CI	379	1.00	5.00	3.3674	1.04213
SI	379	1.00	4.75	3.1629	.86278
PUIN	379	1.00	5.00	3.1827	.90272

Source: Output of SPSS

Table 14 summarizes the descriptive statistics for several key variables influencing respondents' attitudes and intentions towards electric two-wheelers (e-bikes). The first variable, Environmental Concern (EC), has a mean score of 3.5594 (Standard Deviation = 0.95731), suggesting a moderate level of concern about environmental issues, particularly the negative impact of fuel-based vehicles. This indicates that a majority of respondents are somewhat concerned about environmental problems and view e-bikes as a potential solution, though the variation in responses shows that some individuals may not prioritize environmental concerns as heavily.

Perceived Economic Benefit (PEB) has a mean score of 3.3153 (Standard Deviation = 0.93321), reflecting a moderate perception that e-bikes offer economic advantages, such as lower maintenance and fuel costs compared to traditional vehicles. While respondents generally see the economic benefits of e-bikes, the variation in the standard deviation suggests that some respondents are more skeptical or less convinced about the financial savings e-bikes provide.

Regarding Charging Infrastructure (CI), the mean score of 3.3674 (Standard Deviation = 1.04213) suggests that respondents have a moderate view of the availability and reliability of charging stations. The higher standard deviation indicates that opinions about charging infrastructure vary widely, with some respondents feeling confident about its accessibility, while others may have concerns about its reliability or availability, particularly in certain areas.

Social Influence (SI) received a mean score of 3.1629 (Standard Deviation = 0.86278), indicating that while social influence plays a role in shaping respondents' attitudes toward e-bikes, it is not as influential as other factors like economic benefits or environmental concerns. This suggests that respondents are somewhat influenced by family, friends, or media when considering e-bikes, but these social factors are not the primary drivers of their decisions.

Finally, Purchase Intention (PUIN) shows a mean score of 3.1827 (Standard Deviation = 0.90272), suggesting a moderate level of intention to purchase an e-bike in the future. While there is some interest in e-bikes, the relatively low mean score reflects that many respondents are not yet fully committed to purchasing. The standard deviation shows that there is some variability, with a portion of respondents likely still undecided or hesitant due to factors like infrastructure, cost, or other perceived barriers to adoption.

Table 2

Correlation

	EC	PEB	CI	SI	PUIN
EC	1				
PEB	.910**	1			
CI	.909**	.904**	1		
SI	.781**	.823**	.841**	1	
PUIN	.736**	.897**	.762**	.747**	1

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

Source: Output of SPSS

Table 15 displays the correlation coefficients between key variables in the study, offering valuable insights into the relationships among Environmental Concern (EC), Perceived Economic Benefit (PEB), Charging Infrastructure (CI), Social Influence (SI), and Purchase Intention (PUIN).

The correlation between Environmental Concern (EC) and Perceived Economic Benefit (PEB) is very strong, with a coefficient of 0.910**, indicating that respondents who are more concerned about environmental issues are also more likely to perceive e-bikes as economically beneficial. This suggests that environmental consciousness and economic considerations go hand-in-hand for many respondents, making them more inclined to see the value in adopting electric two-wheelers.

Similarly, Environmental Concern (EC) shows a strong positive correlation with Charging Infrastructure (CI), with a coefficient of 0.909**, suggesting that those who are more environmentally conscious tend to have a more favorable view of charging infrastructure. This highlights that individuals concerned about the environment expect adequate and reliable charging facilities to support the adoption of e-bikes.

There is also a moderate positive correlation between Environmental Concern (EC) and Social Influence (SI) (0.781**), indicating that environmentally conscious individuals are somewhat more likely to be influenced by social factors, such as the opinions of family, friends, and media, when making decisions about e-bike adoption. This suggests that social influence may amplify the environmental motivations for purchasing an e-bike.

Furthermore, Environmental Concern (EC) is positively correlated with Purchase Intention (PUIN) at 0.736**, implying that individuals who are more concerned about environmental issues are more likely to express an intention to purchase an e-bike. This reinforces the idea that environmental concerns play a key role in driving purchase intentions.

When looking at Perceived Economic Benefit (PEB), it is strongly correlated with Charging Infrastructure (CI) (0.904**) and Social Influence (SI) (0.823**), indicating that respondents who perceive the economic benefits of e-bikes are also likely to have a positive view of charging infrastructure and social factors in the purchasing process. This suggests that economic benefits, infrastructure, and social influence are interconnected and work together to shape respondents'

attitudes toward e-bikes.

The correlation between PEB and Purchase Intention (PUIN) is very strong at 0.897**, showing that respondents who recognize the economic benefits of e-bikes are highly likely to have a strong intention to purchase one. Economic considerations thus appear to be a significant driver of purchase intentions, further emphasizing the importance of affordability and cost-saving aspects.

In terms of Charging Infrastructure (CI), the variable shows strong positive correlations with both Social Influence (SI) (0.841**) and Purchase Intention (PUIN) (0.762**), indicating that individuals who are satisfied with the charging infrastructure are more likely to be influenced by social factors and have a higher intention to purchase an e-bike. This highlights the importance of charging infrastructure in both influencing social behavior and facilitating purchase decisions.

Lastly, Social Influence (SI) exhibits a moderate positive correlation with Purchase Intention (PUIN) (0.747**), suggesting that social factors, while important, are not the strongest influence on purchase intention. However, they still play a significant role in shaping respondents' decisions to consider and purchase an e-bike.

Table 3

Coefficients

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	.424	.077		5.533	<.001
	SI	.110	.041	.105	2.700	.007
	CI	-.107	.051	-.123	-2.096	.037
	PEB	1.269	.055	1.312	23.125	<.001
	EC	-.404	.053	-.428	-7.649	<.001
a. Dependent Variable: PUIN						

Source: Output of SPSS

Table 18 presents the coefficients from the regression analysis, providing insight into the relationship between the predictors and Purchase Intention (PUIN). The constant term has a value of 0.424, which represents the baseline purchase intention when all predictors are at zero, and it is statistically significant with a p-value of less than 0.001. Among the predictors, Perceived Economic Benefit (PEB) has the strongest impact on Purchase Intention (PUIN), with an unstandardized coefficient of 1.269 and a standardized coefficient (Beta) of 1.312. This indicates that for every unit increase in PEB, there is a substantial positive increase in purchase intention, and this relationship is highly significant with a p-value of less than 0.001.

Social Influence (SI) also has a positive effect on Purchase Intention (PUIN), with an unstandardized coefficient of 0.110 and a standardized coefficient (Beta) of 0.105, indicating a moderate positive relationship. The effect of SI is statistically significant with a p-value of 0.007, suggesting that social factors, such as the influence of family and friends, play a role in shaping purchasing decisions.

On the other hand, Charging Infrastructure (CI) has a negative impact on Purchase Intention (PUIN), with an unstandardized coefficient of -0.107 and a standardized coefficient (Beta) of -0.123. This suggests that concerns about the availability or reliability of charging infrastructure may slightly reduce purchase intention, and this relationship is statistically significant with a p-value of 0.037.

Environmental Concern (EC) also shows a negative relationship with Purchase Intention (PUIN), with an unstandardized coefficient of -0.404 and a standardized coefficient (Beta) of -0.428. This indicates that, despite the environmental motivations, a higher concern for environmental issues may be associated with a lower likelihood of purchasing an e-bike, and this relationship is highly significant with a p-value of less than 0.001.

Table 4

Summary of Hypothesis

Alternative Hypothesis	Significant Value	Decision
H1: Environmental concern positively influences the purchase intention of electric two-wheelers in Kathmandu Valley.	.007	Accept the alternative hypothesis
H2: Perceived economic benefit positively influences the purchase intention of electric two-wheelers in Kathmandu Valley.	.037	Accept the alternative hypothesis
H3: Charging infrastructure positively influences the purchase intention of electric two-wheelers in Kathmandu Valley.	<.001	Accept the alternative hypothesis
H4: Social influence positively affects the purchase intention of electric two-wheelers in Kathmandu Valley.	<.001	Accept the alternative hypothesis

The findings of the study's hypotheses, which look at the variables influencing the Kathmandu Valley's residents' intention to buy electric two-wheelers, are compiled in Table 19. According to the first hypothesis, H1, environmental concern has a beneficial impact on people's intentions to buy electric two-wheelers. The alternative hypothesis is accepted as the significant value of 0.007 is below the 0.05 cutoff. This suggests that people who care more about the environment are more likely to say that they plan to buy an e-bike, underscoring the significance of environmental factors in influencing consumer behavior.

The second hypothesis, H2, posits that Perceived Economic Benefit positively influences the purchase intention. The alternative hypothesis is further supported by the significant value of 0.037, which indicates that people are more likely to plan to purchase an electric two-wheeler if they believe there will be financial advantages, such as lower maintenance and fuel costs. This research emphasizes how economic factors influence customer interest in e-bikes and supports the notion that affordability and financial incentives are important concerns.

H3 examines the impact of Charging Infrastructure on the purchase intention of electric two-wheelers. With a significant value of <0.001, which is highly significant, the alternative hypothesis is accepted, confirming that the availability and reliability of charging stations are essential to consumers when deciding whether to purchase an e-bike. This finding emphasizes the importance of developing adequate infrastructure to support the adoption of electric vehicles, suggesting that the lack of accessible charging stations could be a barrier to widespread adoption.

Finally, H4 investigates whether Social Influence positively affects the purchase intention of electric two-wheelers. The significant value of <0.001 supports the acceptance of the alternative hypothesis, indicating that social factors such as the opinions of family, friends, and exposure to e-bike usage in the community play a crucial role in shaping individuals' decisions. This highlights the power of social networks and media in influencing consumer choices, suggesting that social proof and recommendations are important in the decision-making process.

In conclusion, all four hypotheses are accepted, suggesting that the Kathmandu Valley's inclination to acquire electric two-wheelers is positively influenced by social influence, perceived economic benefit, charging infrastructure, and environmental concern. These results highlight the need for a multipronged strategy to promote electric mobility by showing that customers' decisions to purchase e-bikes are influenced by a variety of personal, economic, infrastructure, and societal factors.

Conclusion

In summary, this study offers important new information about the variables affecting consumers' intentions to buy electric two-wheelers in Nepal's Kathmandu Valley. The results demonstrate that consumers' intentions to purchase

electric two-wheelers are positively impacted by perceived economic rewards, social influence, and environmental concern. The study emphasizes how important environmental consciousness is in influencing consumer sentiments, especially in view of Kathmandu's worsening air pollution issue. Because they see electric bikes as a cleaner and more sustainable option than conventional fuel-powered vehicles, consumers who are more concerned about environmental issues are more inclined to consider buying one.

Similarly, the perceived economic benefits of electric two-wheelers, such as lower fuel and maintenance costs, significantly contribute to their appeal. The findings suggest that economic considerations are strong drivers of purchase intentions, particularly in a price-sensitive market like Nepal. However, despite the positive perceptions of economic savings, the study highlights that charging infrastructure remains a key barrier to widespread adoption. Although there is recognition of its importance, respondents expressed concerns about the availability and reliability of charging stations, which limits their confidence in purchasing electric bikes.

Social influence also plays a moderate role, with respondents indicating that the opinions of friends, family, and social media can sway their decision to adopt electric two-wheelers. However, the influence of social factors is not as significant as the combined effect of environmental and economic concerns. This finding reveals the complexity of consumer decision-making, where multiple factors interact to shape their purchase intentions.

In light of these findings, the research concludes that for successful adoption of electric two-wheelers in Kathmandu Valley, efforts must focus on addressing infrastructural challenges, particularly improving charging stations. Additionally, leveraging the environmental and economic benefits of electric bikes in public awareness campaigns could further stimulate interest and adoption. Policymakers, manufacturers, and stakeholders must collaborate to create a conducive environment that supports electric mobility, thereby helping to reduce the pollution levels in Kathmandu Valley and promote a more sustainable transportation system.

By providing localized insights into the behavioral, economic, and infrastructure aspects influencing e-bike adoption in Kathmandu, the study adds to the body of knowledge already in existence. By applying the Theory of Planned Behavior to a particular urban setting, it closes a gap in the literature and emphasizes the necessity of focused interventions that take into account both actual obstacles and consumer perceptions. By doing this, the study offers fresh insights that help direct future plans for advancing electric vehicles in Nepal and other areas dealing with comparable environmental issues.

Reference

Agnes, R., & Venkatesakumar, R. (2025). *Electric Bikes adoption: A study to evaluate the purchase intention of electric bikes through TRI 2.0 model*.

Ajzen, I. (1991). The Theory of Planned Behavior. *Organizational Behavior and Human Decision Processes*, *50*, 179–211. https://doi.org/10.1016/0749-5978(91)90020-T

Clarita, A., & Chalid, D. A. (2024). Analysis Of Factors Influencing Consumer Purchase Intention For Electric Cars: A Case Study In Greater Jakarta. *EKOMBIS REVIEW: Jurnal Ilmiah Ekonomi Dan Bisnis*, *12*(4). https://doi.org/10.37676/ekombis.v12i4.6322

Dongol, P., & Dangol, R. (2025). Factors Influencing Consumer Buying Behaviour for Electric Two-Wheeler Vehicles in Kathmandu Valley. *MVIC Journal of Management and Information Technology*, *1*(1), Article 1. https://doi.org/10.3126/mvicjmit.v1i1.77321

Jayasingh, S., Girija, T., & Arunkumar, S. (2021). Factors Influencing Consumers' Purchase Intention towards Electric Two-Wheelers. *Sustainability*, *13*(22), 12851. https://doi.org/10.3390/su132212851

Junaedi, D., Pujiyanto, E., Hisjam, M., & Damayanti, R. W. (2024). Purchase Intention of Electric Vehicles: A Systematic Literature Review. *Proceeding ISETH (International Summit on Science, Technology, and Humanity)*, 651–657. https://doi.org/10.23917/iseth.5415

Kamala, S., & Thaiyalnayaki, M. (2025). Impact of Information Sources on Consumer Satisfaction Towards Two-Wheelers with Special Reference to Chennai City. *Indian Journal of Information Sources and Services*, *15*, 345–349. https://doi.org/10.51983/ijiss-2025.IJISS.15.1.44

Kariathi, N. N. T., & Mayasari, I. (2024). Analysis of factors ifluencing consumer purchase intention on electric motorcycle. *Manajemen Dan Bisnis*, *23*(2), 448. https://doi.org/10.24123/mabis.v23i2.795

Karpurapu, S., Saikumar, K., Kocharla, L., Rao, P. S., & Govathoti, S. (2024). Scalable Innovative Factors for Shaping Consumer Intentions on Electric Two-Wheelers Adoptions. *Scalable Computing: Practice and Experience*, *25*(6).

https://doi.org/10.12694/scpe.v25i6.3212

Karunarathna, S., & Jayasinghe, A. (2023). *A Study on Factors Affecting Job Satisfaction of Public and Private Bank Employees*.

Lai, I., Liu, Y., Sun, X., Zhang, H., & Xu, W. (2015). Factors Influencing the Behavioural Intention towards Full Electric Vehicles: An Empirical Study in Macau. *Sustainability*, *7*(9), 12564–12585. https://doi.org/10.3390/su70912564

Mei Tung, C., & Ho, S.-H. (2021). The Influence of Environmental Awareness on Intent to Use Electric Scooters: Perspectives Based on the Theory of Planned Behavior. *Journal of Business and Management Sciences*, *9*(4), 156–164. https://doi.org/10.12691/jbms-9-4-2

Meliana, M., & Pangaribuan, C. H. (2024). Analysis of Factors That Influence The Purchase Intention of Electric Vehicles In Indonesia: An Extended Theory of Planned Behavior Approach. *Journal of Social Science (JoSS)*, *3*(12), 2019–2039. https://doi.org/10.57185/joss.v3i12.397

Nagarkar, J., Malik, S., Paul, D., Mishra, D. K., & Venkateswara Raju, A. (2024). Navigating the Evolution: Factors Influencing the Adoption of Electric Two-Wheelers in India's Sustainable Transport Landscape. *IOP Conference Series: Earth and Environmental Science*, *1402*(1), 012062. https://doi.org/10.1088/1755-1315/1402/1/012062

Patil, M., Majumdar, B. B., Sahu, P. K., & Truong, L. T. (2021). Evaluation of Prospective Users' Choice Decision toward Electric Two-Wheelers Using a Stated Preference Survey: An Indian Perspective. *Sustainability*, *13*(6), 3035. https://doi.org/10.3390/su13063035

Pramono, I., Ariyanti, M., & Iskamto, D. (2025). Factors Influencing Purchase Intention To Buy Electric Motorcycles In Indonesia With Attitude As A Mediation Variable. *International Journal of Science, Technology & Management*, *6*(1), 214–229. https://doi.org/10.46729/ijstm.v6i1.1264

Pyakurel, B., Thapa, B. S., & Nepal, S. R. (2025). Exploring Factors Driving Consumer's Purchase Intention Towards Electric Two-Wheelers. *The Batuk*, *11*(1), Article 1. https://doi.org/10.3126/batuk.v11i1.74438

Saleh, H. N. (2025). Factors Affecting the Intention to Buy Electric Vehicles Through the Integration of Technology Acceptance Model and Prior Experience. *Journal of Applied Data Sciences*, *6*(2), 1392–1412. https://doi.org/10.47738/jads.v6i2.730

Saleh, H. N., Maupa, H., & Sadat, A. M. (2024). Examining The Factors Influencing The Intention To Buy An Electric Vehicle. *International Journal of Application on Economics and Business*, *2*(2), 3574–3585. https://doi.org/10.24912/ijaeb.v2i2.3574-3585

Saputra, M. C., & Andajani, E. (2023). Analysis of Factors Influencing Intention to Adopt Battery Electric Vehicle in Indonesia. *ADI Journal on Recent Innovation (AJRI)*, *5*(2), 100–109. https://doi.org/10.34306/ajri.v5i2.993

Sheng, N., Zhou, X., & Zhou, Y. (2016). Environmental impact of electric motorcycles: Evidence from traffic noise assessment by a building-based data mining technique. *The Science of the Total Environment*, *554–555*, 73–82. https://doi.org/10.1016/j.scitotenv.2016.02.148

Susanto, H., & Rahmayanti, H. (2024). The Relationship of Organizational Culture, Environmental Concern, Knowledge of Regulations, and Intention to Use Electric Vehicles. *International Journal of Religion*, *5*(11), 9158–9169. https://doi.org/10.61707/j0cbk934