

The Impact of Marketing Mix Elements on Consumers' Buying Intention toward Electric Two-Wheelers.

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Abstract

The increasing popularity of electric vehicles has opened up substantial opportunities for manufacturers and marketers of electric two-wheelers. It is crucial to comprehend the factors that affect consumers' purchasing intentions to formulate effective marketing strategies. This research investigates how the four elements of the marketing mix—Product, Price, Place, and Promotion—impact consumers' intentions to buy electric two-wheelers. Utilizing a quantitative research methodology, the study applies multiple regression analysis to assess both the individual and combined effects of the marketing mix variables. The results reveal that Product is the most significant element of the marketing mix, followed by Place and Promotion, whereas Price does not have a notable independent impact. The research recommends that manufacturers of electric two-wheelers concentrate on enhancing product quality, performance, battery longevity, safety, availability, distribution channels, after-sales support, and promotional messaging. In summary, the study concludes that effective management of marketing mix elements is vital for boosting consumers' purchasing intentions regarding electric two-wheelers.

Keywords: Electric Two-Wheelers, Marketing Mix, Buying Intention, Regression Analysis.

1. Introduction

The swift rise in environmental awareness, escalating fuel costs, technological progress, and government initiatives have heightened interest in electric vehicles, especially electric two-wheelers. These electric two-wheelers present numerous advantages, such as decreased operating expenses, diminished reliance on fossil fuels, lower emissions, and enhanced urban mobility. Consequently, more consumers are viewing electric two-wheelers as a viable alternative to traditional petrol-powered vehicles. Nevertheless, the willingness of consumers to buy electric two-wheelers is influenced by various factors, including product features, pricing, availability, distribution channels, and marketing efforts.

The marketing mix, commonly illustrated by the four Ps—Product, Price, Place, and Promotion—significantly impacts consumer purchasing choices. Factors associated with the product, including design, performance, battery longevity, safety, quality, and technological attributes, can shape consumers' views on electric two-wheelers. Price denotes the perceived affordability and value, whereas Place pertains to product availability, dealership networks, accessibility, and service options. Promotion encompasses advertising, social media outreach, discounts, demonstrations, and various activities aimed at raising awareness and swaying consumer decisions.

In the context of electric two-wheelers, it is essential for manufacturers and marketers to understand the importance of the various elements of the marketing mix. Consumers may have reservations about battery performance, charging infrastructure, maintenance, product reliability, and after-sales service. Therefore, it is imperative for companies to devise marketing strategies that respond to these concerns and promote the adoption of electric mobility. Hence, the present study, **“The impact of marketing mix elements on consumers' buying intention toward electric two-wheelers.”** examines the influence of Product, Price, Place, and Promotion on consumers' buying intention.

2. Review of Literature

Tanwar et al. (2026) examined consumer trends, challenges, and strategies related to the adoption of electric two-wheelers in the Delhi NCR region. It identified several key factors influencing this adoption, such as environmental awareness, cost efficiency, government incentives, and advancements in technology. Significant challenges highlighted included concerns about being stranded during trips, high costs associated with batteries, low acceleration rates, safety issues, limited battery lifespan, and restricted driving range. Additionally, the study revealed that the availability of charging infrastructure has a positive impact on consumer perceptions, while the perceived value for money plays a mediating role between price and purchase intention. The research suggested that enhancements in charging infrastructure, subsidies, and battery technology could greatly improve the adoption of electric two-wheelers.

Pyakurel et al. (2025) investigated the elements affecting consumers' intention to buy electric two-wheelers in Kathmandu Valley, Nepal. The results indicated that social influence emerged as the most significant predictor of purchase intention, succeeded by perceived economic advantages and environmental issues. Additionally, the availability of charging infrastructure positively and significantly impacted purchase intention. In detail, social influence had a coefficient of $\beta = 0.323$, perceived economic benefits $\beta = 0.260$, environmental concerns $\beta = 0.239$, and charging infrastructure $\beta = 0.118$.

Sudhir et al. (2025) A bibliometric analysis was performed on research regarding consumer decisions to buy two-wheelers from 2011 to 2025. The researchers collected 460 scholarly articles and, after applying PRISMA-based screening, narrowed it down to 44 pertinent articles for in-depth examination. The metadata was analyzed using RStudio. The findings revealed a notable increase in research on two-wheeler purchase decisions, particularly in the years 2021, 2022, and 2024. India and Indonesia were recognized as significant contributors to this body of literature. Recent studies have increasingly concentrated on topics such as purchase intention, electric motorcycles, electric vehicles, and technology adoption, while themes like purchase behavior, consumer attitude, and product innovation have also gained prominence.

Puong et al. (2024) An investigation was conducted into the factors influencing the intention to purchase electric motorbikes among consumers in Hanoi, Vietnam. The study identified six key determinants that significantly affect consumers' purchasing intentions: environmental awareness, consumer attitude, perceived behavioral control, the appeal of alternative transportation options, subjective norms, and promotional policies. The regression analysis revealed that the model accounted for 72.3% of the variance in purchase intention, with an adjusted R^2 of 0.723. All six factors were found to be statistically significant. Notably, the appeal of alternative vehicles exerted the most substantial negative impact ($\beta = -0.299$), followed by consumer attitude ($\beta = 0.289$), environmental awareness ($\beta = 0.231$), perceived behavioral control ($\beta = 0.199$), and subjective norms ($\beta = 0.173$).

Sharma et al. (2024) explored the factors that affect consumers' intentions to buy electric cars in India. Although it concentrated on electric cars instead of two-wheelers, the insights gained are pertinent to the general literature on consumer behavior concerning electric vehicles. The research emphasized the influence of attitude, subjective norms, perceived behavioral control, perceived cost, and awareness on consumers' purchasing decisions. It concluded that consumer behavior is shaped by attitude, subjective norms, and perceived behavioral control. Furthermore, the study took into account demographic factors like age, gender, income, and education concerning technological anxiety and awareness.

Ukesh et al. (2022) investigated the willingness of consumers to buy electric two-wheelers in the Coimbatore District of Tamil Nadu. Data was gathered from 120 participants through a structured questionnaire, and a Probit model was employed to determine the factors influencing their purchasing decisions. The findings revealed that age, gender, monthly income, residential location, and information sources significantly impacted the respondents' willingness to purchase electric two-wheelers. Additionally, environmental concerns emerged as a crucial factor driving the shift towards battery-operated vehicles.

3. Objective of the Study

- To analyse the impact of marketing mix elements on buying intention of consumers towards electric two-wheelers.

4. Research Methodology

- **Research Design:** Descriptive and analytical research design.
- **Population:** Individuals.
- **Sample Size:** Data was collected from 200 respondents in Davanagere City, Karnataka.
- **Sampling Method:** Simple Random Sampling.
- **Data Collection:** Primary Data has been collected through a structured questionnaire and Secondary Data has been collected from books, journals, research papers.
- **Statistical Tools:** Multiple Linear Regression.

5. Data Analysis, Result and Discussions

Table 1. Demographic Profile of the Respondents

Sl. No.	Demographic Variable	Category	Frequency (F)	Percentage (%)
1	Gender	Male	114	57.0
		Female	86	43.0
		Total	200	100.0
2	Marital Status	Married	110	55.0
		Unmarried	90	45.0
		Total	200	100.0
3	Age Group	Below 25 Years	50	25.0
		25 to 35 Years	56	28.0
		35 to 45 Years	50	25.0
		Above 45 Years	44	22.0
		Total	200	100.0
4	Educational Qualification	No Education	18	9.0
		SSLC/PUC	32	16.0
		Undergraduate	88	44.0
		Postgraduate	62	31.0
		Total	200	100.0
5	Occupation	Private/Public Sector Employee	67	33.5
		Business	34	17.0
		Agriculture	30	15.0
		Homemaker/Students	69	34.5
		Total	200	100.0
6	Monthly Income	Below Rs. 20,000	55	27.5
		Rs. 20,000 to 30,000	68	34.0
		Rs. 30,000 to 40,000	26	13.0
		Above Rs. 40,000	51	25.5
		Total	200	100.0

Table 2. Statements for each Variable

Variable	Statements
Product	The range of the battery in electric two-wheelers aligns with my expectations.
	I consider electric two-wheelers to be both safe and dependable.
	The variety of models and features enhances my desire to purchase an electric two-wheeler.

	The safety features present in electric two-wheelers affect my decision to buy.
	The environmentally friendly characteristics of electric two-wheelers impact my buying choice.
Price	The cost of electric two-wheelers is justifiable when considering their advantages.
	The operational expenses of an electric two-wheeler are less than those of a petrol two-wheeler.
	Enticing discounts and promotional deals enhance my desire to buy an electric two-wheeler.
	Convenient financing options and EMI plans affect my choice to acquire an electric two-wheeler.
	The total ownership cost impacts my intention to purchase an electric two-wheeler.
Place	The convenient presence of electric two-wheelers at local dealerships affects my intention to buy.
	The quantity of authorized dealers impacts my choice to acquire an electric two-wheeler.
	The accessibility of charging stations shapes my desire to purchase an electric two-wheeler.
	The option to buy electric two-wheelers online enhances the ease of the purchasing process.
	The strategic location of service centers plays a role in my intention to make a purchase.
Promotion	Advertisements enhance my awareness of electric two-wheelers.
	Promotions on social media affect my interest in electric two-wheelers.
	Test rides and product demonstrations impact my intention to purchase.
	Marketing campaigns that emphasize savings on fuel boost my buying intention.
	Information shared by dealers affects my decision to buy.
Buying Intention	I plan to buy an electric two-wheeler in the future.
	I would prioritize an electric two-wheeler as my top option when selecting a two-wheeler.
	I am inclined to acquire an electric two-wheeler in the coming years.
	I would suggest an electric two-wheeler to anyone considering a two-wheeler purchase.
	I would opt for an electric two-wheeler instead of a petrol model if the advantages are appealing.

Table 3. Reliability Statistics

Cronbach's Alpha	N of Items
.841	25

The research employed Cronbach's Alpha to assess the internal consistency and reliability of the questionnaire. A widely recognized threshold is 0.70 or higher. The calculated Cronbach's Alpha is 0.841 for 25 items, demonstrating a strong level of internal consistency. Given that this value significantly exceeds 0.70, the measurement tool is deemed reliable and appropriate for subsequent statistical analysis. This indicates that the responses to the items concerning the marketing mix and purchasing intention exhibit a satisfactory level of consistency.

Multiple Linear Regression Model Adequacy

Model adequacy checking is a method to determine how well the data fits the model. To check the model adequacy checking, the model variables need to be normal distributed, and not multicollinearity in order to adequate the Multiple Linear Regression Model.

Multiple regression analysis was conducted to determine whether the four marketing mix elements—Product, Price, Place and Promotion—have a significant influence on Buying Intention toward electric two-wheelers.

Table 4. Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.606 ^a	.367	.354	.47650
a. Predictors: (Constant), Promotion, Place, Price, Product				
b. Dependent Variable: BuyingIntention				

The multiple correlation coefficient (R) is 0.606. This indicates a moderate positive relationship between the combined marketing mix variables and consumers' buying intention.

The R Square value stands at 0.367, which indicates that the four marketing mix variables together account for roughly 36.7% of the variation in consumers' buying intentions. The Adjusted R Square is 0.354, suggesting that after accounting for the number of independent variables in the model, about 35.4% of the variation in buying intention is attributed to the marketing mix variables. The Standard Error of Estimate is 0.47650, reflecting the average discrepancy between the actual buying-intention scores and the values forecasted by the regression model. A lower standard error typically signifies more precise predictions.

Table 5. ANOVA Table

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	25.712	4	6.428	28.311	<.001 ^b
	Residual	44.275	195	.227		
	Total	69.987	199			
a. Dependent Variable: BuyingIntention						
b. Predictors: (Constant), Promotion, Place, Price, Product						

The ANOVA table evaluates if the overall regression model significantly predicts consumers' buying intentions. The computed F-value is 28.311, with a significance level below 0.001. Given that $p < 0.05$, the regression model is deemed statistically significant. Consequently, the null hypothesis, which states that Product, Price, Place, and Promotion do not collectively influence consumers' buying intentions, is rejected. Therefore, the regression model offers statistically significant evidence that the elements of the marketing mix are crucial factors in determining consumers' intentions to purchase electric two-wheelers.

Multicollinearity, Histogram of residuals and Normal Q-Q Plot

The VIF values range from 1.362 to 1.646. These are relatively low values and indicate that there is no serious multicollinearity problem among the independent variables. Similarly, the tolerance values range from 0.608 to 0.734, indicating adequate tolerance. Therefore, Product, Price, Place and Promotion are sufficiently distinct for their individual effects to be interpreted in the regression model.

In addition, multiple regression analysis was also sensitive to multicollinearity issues. Therefore, the Variance Inflation Factor (VIF) and tolerance levels are utilized to assess multicollinearity issues through the regression output from SPSS. Hair et al. (2019) indicated that the VIF should not surpass 10, and tolerance values should be greater than 0.10.

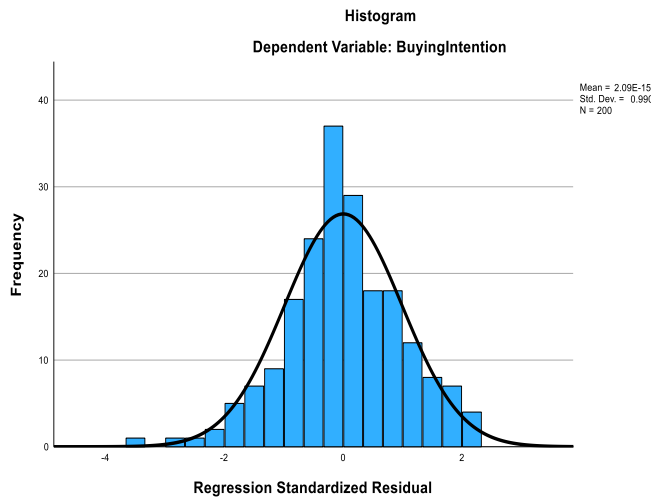


Figure 1

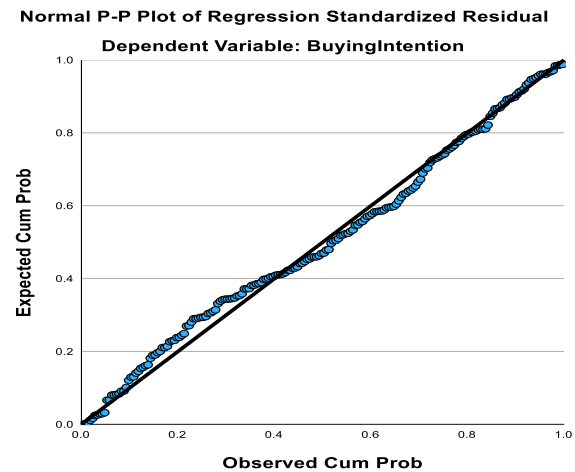


Figure 2

Based on the figure (1) Histogram of residuals and (2) Normal Q-Q Plot, the residuals are approximately near to the straight line and the histogram is bell-shaped. It indicates the model is normally distributed.

Table 6. Multiple Linear Regression Results

Coefficients ^a								
Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	.790	.318		2.482	.014		
	Product	.254	.071	.261	3.597	<.001	.616	1.623
	Price	.125	.082	.109	1.534	.127	.637	1.569
	Place	.242	.081	.219	2.991	.003	.608	1.646
	Promotion	.218	.075	.194	2.926	.004	.734	1.362

a. Dependent Variable: BuyingIntention

H₁ - There is a significant positive influence of Product on consumers' buying intention regarding electric two-wheelers.

The regression results indicate that Product has a positive and statistically significant influence on consumers' buying intention. The unstandardized coefficient ($B = 0.254$) shows that a one-unit increase in the perceived effectiveness of the Product element is associated with a 0.254-unit increase in buying intention, while keeping other marketing mix variables constant. The standardized coefficient ($\beta = 0.261$) indicates that Product has the strongest relative influence among the four marketing mix variables. The effect is statistically significant ($t = 3.597$, $p < 0.001$), hence null hypothesis rejected, confirming that Product is an important factor influencing consumers' buying intention toward electric two-wheelers. Therefore, product-related characteristics such as perceived quality, design, performance, features, battery-related characteristics and overall product attractiveness are important considerations in consumers' purchase intentions

H₂ - There is a significant positive influence of Price on consumers' buying intention regarding electric two-wheelers.

The regression analysis shows that Price has a positive but statistically insignificant influence on consumers' buying intention toward electric two-wheelers. The positive coefficient ($B = 0.125$; $\beta = 0.109$) indicates that an increase in perceived price-related factors is associated with a small increase in buying intention. However, since the significance value ($p = 0.127$) is greater than 0.05, the effect is not statistically significant. Hence fail to reject null hypothesis. Thus, Price does not independently predict consumers' buying intention when Product, Place, and Promotion are controlled.

H₃ - There is a significant positive influence of Place on consumers' buying intention regarding electric two-wheelers.

The regression analysis shows that Place has a positive and statistically significant influence on consumers' buying intention toward electric two-wheelers. The positive coefficient ($B = 0.242$; $\text{Beta} = 0.219$) indicates that better availability, accessibility, and distribution of electric two-wheelers are associated with higher buying intention. Since the significance value ($p = 0.003$) is less than 0.05, hence null hypothesis rejected, the effect is statistically significant. Therefore, Place is an important predictor of consumers' buying intention, although its influence is lower than that of Product. This suggests that factors represented by the Place construct—such as availability, accessibility and distribution-related considerations—are important in shaping consumers' purchase intention.

H₄ - There is a significant positive influence of Promotion on consumers' buying intention regarding electric two-wheelers.

The regression analysis indicates that Promotion has a positive and statistically significant influence on consumers' buying intention toward electric two-wheelers. The coefficient ($B = 0.218$; $\text{Beta} = 0.194$) shows that an increase in promotional activities is associated with an increase in consumers' buying intention. Since the significance value ($p = 0.004$) is less than 0.05, hence, null hypothesis rejected, the effect is statistically significant. However, its relative influence is lower than Product and Place. This indicates that promotional communication and activities represented by the study's Promotion construct can play an important role in encouraging consumers' purchase intentions.

6. Findings, Suggestions and Conclusion**Findings**

The statistical analysis provides the following major findings:

- Overall regression model is significant: The ANOVA results show that the regression model is statistically significant ($F = 28.311$, $p < 0.001$). Thus, Product, Price, Place, and Promotion collectively influence consumers' buying intention.
- Model explanatory power: The model explains approximately 36.74% of the variation in buying intention ($R^2 = 0.367$). The remaining 63.26% may be explained by other factors not included in the study.
- Product has the strongest influence: Product has a positive and significant influence on buying intention ($B = 0.254$, $\text{Beta} = 0.261$, $p < 0.001$). This indicates that product-related factors such as quality, design, performance, battery characteristics, and features are important in influencing consumers.
- Place has a significant influence: Place significantly and positively influences buying intention ($B = 0.242$, $\text{Beta} = 0.219$, $p = 0.003$). Better availability, accessibility, dealerships, and distribution facilities can increase consumers' willingness to purchase.
- Promotion has a significant influence: Promotion has a positive and significant effect ($B = 0.218$, $\text{Beta} = 0.194$, $p = 0.004$). Effective advertising, promotional offers, digital marketing, and communication can encourage consumers to consider electric two-wheelers.
- Price is not statistically significant: Price has a positive coefficient but does not have a significant influence ($B = 0.125$, $\text{Beta} = 0.109$, $p = 0.127$). Therefore, price alone does not significantly predict buying intention when the other marketing mix variables are controlled.

Suggestions

- Electric two-wheeler manufacturers need to prioritize battery longevity, vehicle performance, safety, durability, aesthetics, and technological advancements, as these factors significantly impact purchasing intentions.
- Businesses should enhance the accessibility of electric two-wheelers in both urban and semi-urban regions. Easy access to dealerships and opportunities for test rides can boost purchase intentions.
- Manufacturers ought to offer dependable servicing, warranty assistance, availability of spare parts, and battery-related services to foster consumer trust.
- Companies should leverage social media, online marketing, demonstrations, test rides, and customer reviews to raise awareness about electric two-wheelers.
- Incentives such as exchange programs, introductory discounts, financing options, loyalty rewards, and seasonal promotions can motivate potential buyers.

- Given that price was not statistically significant, companies should not rely solely on price cuts. Instead, they should emphasize the overall value proposition, which includes lower operating costs, maintenance savings, battery warranties, and long-term advantages.
- Businesses should inform consumers about charging infrastructure, battery upkeep, operating expenses, environmental benefits, and the practical perks of electric two-wheelers.
- An expanded network of charging stations can alleviate consumer concerns regarding charging convenience and promote adoption.
- Companies should segment their target audience and tailor marketing strategies to align with their needs, income brackets, commuting habits, and preferences.
- Test rides and live demonstrations can assist consumers in grasping vehicle performance and dispelling uncertainties about electric two-wheelers.

Conclusion

The regression analysis demonstrates that marketing mix elements significantly influence consumers' buying intention toward electric two-wheelers. The findings suggest that manufacturers should give highest priority to Product, followed by Place and Promotion. Since Price was not statistically significant, companies should focus more on product quality, accessibility, service support, consumer education, and effective promotional communication rather than relying mainly on price reductions to increase buying intention. Overall, the findings support the importance of an effective product, place and promotion strategy for increasing consumers' buying intention toward electric two-wheelers.

7. References

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