

## THE EFFECT OF PRODUCT QUALITY, PRICE, AND CHARGING INFRASTRUCTURE ON ELECTRIC MOTORCYCLE PURCHASE DECISIONS

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### *Abstract*

This study aims to ascertain the impact of product quality, cost, and charging infrastructure on the purchase decision of electric motorcycles in Madiun City. There were 385 responders in all for this quantitative study. This study used an unknown sample as its sampling strategy. A Google Form was utilized to distribute the questionnaire used to collect data for this investigation. The SPSS 25 test tool is used in this study's data analysis methodology. The study's findings indicate that while pricing has a major impact on Madiun City residents' decisions to buy electric motorcycles, product quality also has a big impact, and charging infrastructure has a significant influence on the purchase decision of electric motorcycle in Madiun City.

**Keywords:** Product Quality, Price, Infrastructure, Purchase Decision

### *Abstract*

*This study aims to ascertain how pricing, charging infrastructure, and product quality affect consumers' decisions to buy for electric motorcycles in Madiun City. This study has 385 participants and is quantitative in nature. This study's sampling strategy makes use of an unidentified sample. A Google Form is used to send a questionnaire used for data collecting in this investigation. The SPSS 25 test tool is used in this study's data analysis methodology. According to the study's findings,*

*Madiun City residents' decisions to buy electric motorcycles are significantly influenced by three factors: price, product quality, and charging infrastructure.*

**Keywords:** *Product Quality, Price, Infrastructure, Purchasing Decision*

## A. INTRODUCTION

Transportation problems in medium-sized cities such as Madiun continue to be a concern, especially due to congestion, air pollution, and high fuel consumption. This encourages the government to accelerate the adoption of environmentally friendly vehicles, one of which is through The Republic of Indonesia's Finance Minister's Regulation Number 38 of 2023 which provides incentives for the purchase of electric motorcycles. However, the adoption of electric vehicles still faces obstacles, such as relatively high prices and limited charging infrastructure (Rahman, 2023). The purchase decision of an electric motor is not only influenced by functional needs, but also by the perception of product quality, price competitiveness, and the availability of supporting infrastructure. According to Kotler & Armstrong (2012), purchasing decisions are mental processes that involve identifying needs, gathering information, weighing options, making decisions, and acting after making a purchase.

Several previous studies have examined the factors that influence electric vehicle purchase decisions. For example, Fahmi (2023) found that Price has a detrimental effect on interest in purchasing electric bicycles. Hermawan & Fauzi (2023) also found the impact of product quality on decisions to buy electric motors, even though the findings of their study showed inconsistencies in consumer value

variables. However, research on the In Madiun City, the simultaneous impact of product quality, cost, and charging infrastructure on the decision to buy an electric motorcycle is still quite small. Therefore, the purpose of this study is to examine how product quality, cost, and charging infrastructure affect consumers' decisions to buy electric motorcycles in Madiun City.

## **Theoretical Studies**

### 1. Consumer Behavior Theory

According to the Theory of Planned Behavior, attitudes, subjective norms, and perceptions of behavior control all have an impact on a person's intention to carry out an action (Ajzen, 1991). In this instance, the choice to purchase an electric motor is impacted by attitudes towards electric motors, norms, and perceptions of control.

### 2. Product Quality

Bansaleng et al. (2021) claim that product quality is a gauge of whether a good or service has a useful value that meets expectations. Performance, features, dependability, appropriateness, longevity, appearance, and perceived quality are all aspects of product quality (Garvin, 1987; Tjiptono in Nugroho et al., 2023). Good quality will increase consumer confidence and drive purchasing decisions.

### 3. Price

The price is the sum of money that buyers must pay for a thing (Kotler & Armstrong, 2017). Price perception is related to affordability, price matching with quality, competitiveness, and price matching with benefits (Kotler & Armstrong, 2008). Prices that are considered not commensurate with the benefits can hinder the purchase decision of an electric motor.

#### 4. Charging Infrastructure

Charging infrastructure is a facility that allows charging of electric motorcycle batteries, both through SPKLU and battery swapping systems (Presidential Regulation No. 55 of 2019). Infrastructure indicators include availability, accessibility, reliability, charging costs, and location distribution (IEA, 2023). Customers are more interested in purchasing electric motorcycles when SPKLU is of greater quality and more readily available.

#### 5. Purchase Decision

The purchase decision is The decision of the customer to buy a specific product out of a range of options (Kotler & Armstrong, 2012). The indicators include need identification, search for information, assessment of alternatives, decisions to buy, and actions taken after buying.

#### **Hypothesis:**

H1: Product quality has a positive and significant effect on the purchase decision of an electric motorcycle in Madiun City.

H2: Price has a positive and significant effect on the purchase decision of an electric motorcycle in Madiun City.

H3: Charging infrastructure has a positive and significant effect on the purchase decision of electric motorcycles in Madiun City.

## B. METHOD

This kind of study uses a survey approach and is quantitative in nature. The research population is the people of Madiun City who have used or are interested in electric motorcycles. The research sample of 385 respondents was obtained using the purposive sampling technique. A questionnaire on a Likert scale from 1 to 5 served as the research tool. Several linear regression tests with the help of SPSS version 25, through validity, reliability, normality, multicollinearity, and heteroscedasticity tests.

## C. RESULTS AND DISCUSSION

The study's findings demonstrate that the three separate factors price, charging infrastructure, and product quality all significantly impact the purchase decision of electric motorcycles in Madiun City. An  $R^2$  value of 0.687 indicates that 68.7% These three factors account for a large portion of the variance in purchasing decisions. Here is a summary of the results of the statistical tests.

Test	Value	Significance	Information
T test (Product Quality)	t = 6.854	0,000	Significant
T test (Price)	t = 3.915	0,000	Significant

T test (Infrastructure)	t = 5.287	0,000	Significant
F&R <sup>2</sup> Test	F = 123,456; R <sup>2</sup> = 0.687	0,000	

Source: Primary Data Processed Using SPSS 25 (2025)

The analysis's findings demonstrate that product quality has a significant impact on the purchase decision of electric motorcycles in Madiun City, followed by charging infrastructure and price. These findings indicate that consumers are more concerned about the technical aspects and performance of electric motorcycles than price alone. Charging infrastructure is an important factor as it relates to ease of use, while price, although significant, is not a major barrier when consumers assess the long-term benefits of electric motors.

#### **D. CONCLUSION**

The following conclusions can be made in light of the data analysis findings about how product quality, cost, and charging infrastructure affect Madiun City residents' decisions to buy electric bikes:

1. The quality of the product has a big impact on the decision to buy electric motorcycles in Madiun City. This shows that consumers consider quality as the primary element in creating decisions to purchase electric motorcycles in Madiun City.

2. Price has a significant effect on the purchase decision of an electric motorcycle. Thus, a competitive and flexible pricing strategy can increase the attractiveness of electric motorcycle products in Madiun City.
3. Charging infrastructure significantly influences the choice to buy electric motorcycles in Madiun City. The convenience and availability of charging are one of the factors that affect the level of trust and purchase decisions of electric motorcycles in Madiun City.

## **E. SUGGESTION**

This research contributes to science's advancement, particularly in the area of marketing management, with the majority of factors influencing the purchase decision of environmentally friendly technology products, namely electric motors. The findings of this study are expected to be a reference for future researchers who discuss similar topics, with a wider scope and the use of additional variables so that the understanding of consumer behavior becomes more comprehensive. Some of the suggestions that researchers can give based on the conclusions that have been mentioned are as follows:

### **1. Practical Advice**

Electric motorcycle manufacturers and distributors in Madiun City are expected to maintain and improve product quality, especially in terms of performance, features, and design that are in line with the needs of the community. Sealin, therefore, needs to implement a price strategy that is

affordable but still reflects the value of the product, in order to increase consumer appeal. On the other hand, increasing the number and quality of charging infrastructure, both in public locations and residential areas, is also very important so that consumers feel comfortable and confident in using electric motors.

## 2. Theoretical Suggestions

Further research is suggested to explore other variables beyond product quality, price, and charging infrastructure, such as brand image, environmental awareness, or after-sales service, that may influence electric motor purchase decisions. The addition of these variables is expected to improve the existing theoretical model and provide extensive research results.

## 3. Academic Advice

For academics and researchers in the future, it is recommended to use a variety of theoretical frameworks and analytical approaches, in order to find new perceptions of the factors influencing the adoption of electric vehicles. In addition, conducting research in different locations or with qualitative methods can provide a deeper understanding and relevance to the development of the environmentally friendly vehicle industry in Indonesia.

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# SIMBA

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