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A Study of Consumer Preferences Towards Electrical Scooters Among Youngsters in Patna

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Abstract
Air pollution and rising fuel prices are changing how people travel in cities like Patna, especially among young people. The air quality in the city has been getting worse over time, mainly because of petrol vehicles, which is becoming a serious health concern. This study looks at whether young people prefer electric scooters or petrol scooters and what factors influence their choice. It focuses on various aspects such as cost, comfort, performance, and awareness about pollution. The main problem is that even though people know that pollution is increasing, many still choose petrol scooters over electric ones. The study is based on primary data for which a survey is conducted with a detailed questionnaire to understand the opinions and choices of young people in Patna. The results show that electric scooters are becoming more popular because they are cheaper to use and better for the environment. However, many people are still unsure about buying them because of limited charging points, concerns about battery range, and higher starting prices. Suggestions for policy recommendations are made with special reference to, better charging facilities, more awareness, and financial support in order to promote electrical vehicles among youth in Patna. Electric scooters can help reduce pollution and improve air quality.

Keywords: *Electric Scooters, Petrol Scooters, Consumer Preference, Youth, Sustainable Mobility, Patna.*

1. Introduction
Today, cities are growing fast and industries are also increasing, so air pollution has become a big problem. The Air Quality Index (AQI) helps us understand how clean or polluted the air is. When AQI levels are high, it can harm our health and cause problems like breathing issues. Because of this, people are slowly becoming more aware, and in a way, they are trying to change their daily habits. One important change can be seen in how people choose their vehicles. Petrol and diesel vehicles create a lot of pollution, and this affects the environment badly. So, many people are now thinking about better options, and electric scooters are one of them. [1] These scooters do not produce harmful smoke, and they are cleaner for the environment. They are also very simple to use, simple to manage in daily life. Consumer behaviour means how people decide what to buy and why they buy it. Earlier, people mostly focused on price and comfort, but now they also think about the environment. When AQI levels increase, people feel more concerned, and maybe they start looking for eco-friendly choices. Electric scooters are becoming a popular option because they help reduce pollution. Electric scooters have many advantages. [2] They cost less to run, and they do not need much maintenance. They also make less noise, so they are better for daily use. Governments are also supporting electric vehicles by giving subsidies and building charging stations. Fuel prices are also rising, and this is another reason why people are showing interest in electric scooters. However, not everyone is ready to switch. Some people are still unsure because of factors like cost, lack of awareness, and fewer charging stations. Income level and trust in brands also play an

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important role. In places where AQI is very high, people may feel more pressure to choose cleaner options, at least to some extent. This study tries to understand how AQI affects consumer behavior, and how people decide whether to buy an electric scooter or not. [25] It will also look at what problems people face and what motivates them. [3]

2. Research Methodology

The study follows a quantitative and descriptive research design to analyse consumer behavior towards electric scooters in relation to air quality awareness. This study is based on primary data, which is collected directly from respondents using a structured questionnaire. The data is collected from people (mainly youth) to understand their views on electric scooters and air quality (AQI). [4] We use a survey method, and the questionnaire is shared online/offline to gather responses. The collected data is then organized in tables and charts, and simple analysis is done to understand patterns. So, this method helps us study real consumer behavior in a practical way using actual responses.

3. Literature Review

Around 65%–70% of consumers are aware of environmental issues, and they understand the need for eco-friendly products. But only about 30% actually buy such products regularly. This shows that there is a gap between awareness and action, and maybe practical problems affect decisions. [5] Nearly 58% of people are interested in buying electric scooters, mainly because fuel prices are rising and pollution is increasing. Also, about 62% said low running cost is a major reason for their interest. But only around 25% have actually purchased an electric vehicle. [26] About 70% of people believe electric scooters are eco-friendly, and nearly 60% think they are economical. However, around 55% said lack of charging stations is a big problem, and 48% said they do not have enough knowledge. So, in a way, people are interested but still unsure. A study shows that 68% of young consumers (18–35 age group) are more interested in electric scooters. People with medium and high income are more likely to buy them. So, age and income both influence decisions, and younger people are more open to new ideas. Around 52% of people are concerned about safety, and nearly 47% worry about battery life and performance. These concerns affect their final decision, even if they like the idea of electric scooters. [6] In a way, small doubts can stop people from buying. Electric scooters can reduce carbon emissions by about 30%–50% compared to petrol vehicles, depending on usage. This makes them a better option for the environment. As pollution increases, people are slowly thinking about cleaner transport choices. In India, electric two-wheeler sales increased by more than 150% between 2021 and 2023. This growth is mainly due to rising fuel prices, government support, and awareness about pollution. So, demand is growing, and maybe it will increase more in future. [7]

4. Analysis and Discussion

4.1.Air Quality Awareness as a Variable

A lot of respondents mentioned things like breathing problems, eye irritation, even skin issues. That's not abstract awareness. That's personal. And when something becomes personal, it usually starts influencing decisions. At least a little. But here's the interesting part. Awareness doesn't automatically mean action. Even though many people agreed that pollution is a serious problem, and even said they'd be okay paying a bit more for a cleaner option, they're still not fully switching to electric scooters. So, there's this gap. People care, but they hesitate. Some of that comes from how often they actually think about pollution. [8] A few check AQI regularly, but many only look at it occasionally, or not at all. So, the concern is there, but it's not always active in daily decision-making. What really pushes people is direct experience.

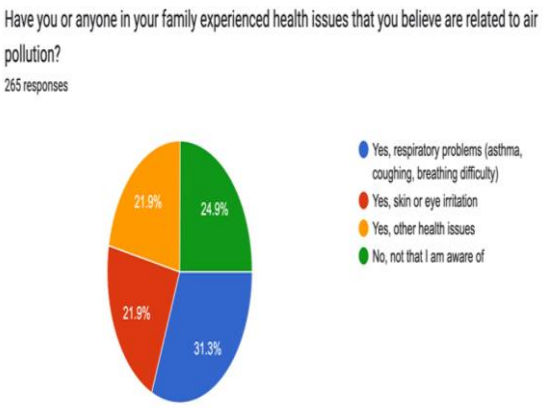

Figure 1 Responses of Yes or No Question

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The ones who've had health issues linked to pollution seem more open to electric scooters. It makes sense. When something affects the people or their family, it stops being just "information" and becomes a reason to change. So, awareness matters, but it's not strong enough on its own. It needs support from other things like affordability and convenience. Otherwise, people just stay stuck between knowing and actually doing something. As shown in Figure 1.

4.2.Cost, Comfort, and Performance as Factors

Cost comes up again and again in our data. A lot of people clearly see electric scooters as cheaper to run. No petrol, less maintenance, and some even mentioned saving a decent amount every month. That's a strong point. But then the same people turn around and hesitate because of the initial price. [9] That upfront cost still feels heavy. Especially for students or younger users who don't always have full financial independence. As shown in Figure 2 & 3.

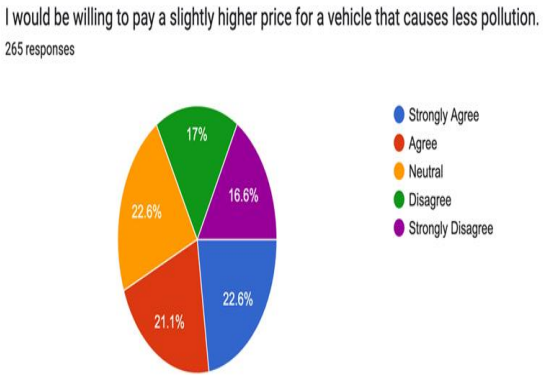

Figure 2 Responses of Agree or Disagree Question

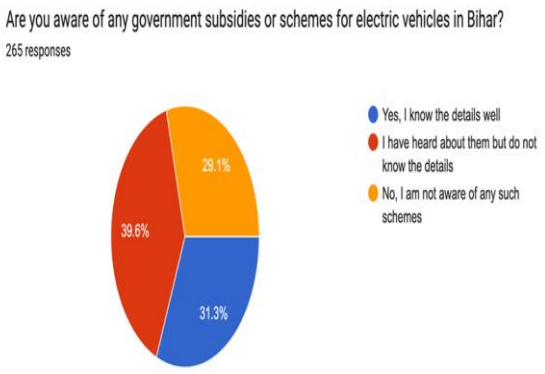

Figure 3 Responses of Yes or No Question

Comfort is interesting too. Electric scooters are seen as smooth, quiet, and easy. That works really well for city travel. Short distances, daily commuting, less noise, less hassle. As shown in Figure 4. [10]

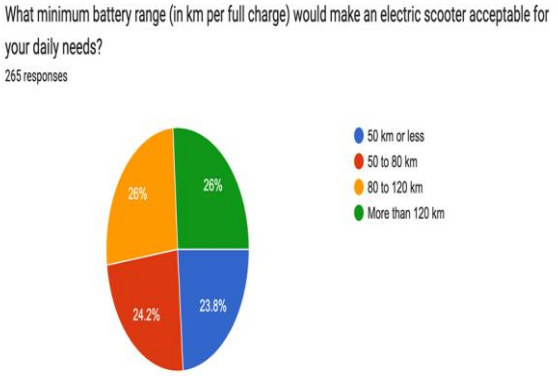

Figure 4 Responses of Minimum Battery Range

But when it comes to performance, that's where doubts start creeping in. People keep coming back to range and charging. Most are okay with 50 to 80 km, which fits typical city use. Some want more, especially if they travel longer distances. [11] Charging time is also a mixed bag. Some are fine with overnight charging; others want faster options. And this is where petrol scooters still win. People don't think twice. [27] They just refill and go. That reliability is hard to compete with. So, what is seen is a trade-off. Electric wins on running cost and comfort. Petrol wins on convenience and confidence. And most people are still deciding which matters more to them.

4.3.Petrol vs Electric, What People Really Think

If everything is stripped down, this comparison isn't just about machines. It's about habits. Petrol scooters are familiar. [12] People have grown up with them. They know how they work, where to refill, what to expect. There's no uncertainty. Electric scooters, on the other hand, feel new. Not completely unknown, but still not fully trusted. Our data shows something important though. A lot of people believe electric scooters will become more common in the next few years. That's a shift in mindset. Even if they're not buying now, they see it coming. And when people talk about electric scooters, the positives are pretty consistent. Cheaper to run. Less maintenance. Better

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for the environment. Good for short daily travel. But the doubts are just as consistent. [13] Charging issues. Battery concerns. Long-distance travel. Basically, anything that breaks routine or adds uncertainty. There's also this social angle that's easy to miss but actually quite powerful. People said that seeing others use electric scooters would increase their confidence. That's huge. [14] It means adoption isn't just individual. It spreads. One person switches, then another feels okay doing it too. It builds slowly, like a trend. So right now, petrol is still the safe choice. Electric is the growing choice. And the balance is slowly shifting. As shown in Figure 5.

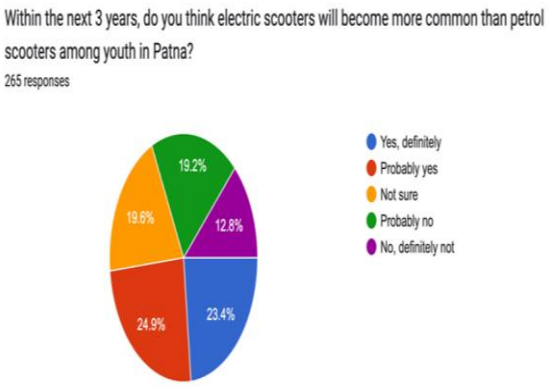

Figure 5 Responses of Yes or No Question

4.4.Barriers That Are Holding People Back

This part is where everything comes together. Because even if people like the idea of electric scooters, something is stopping them. The biggest one is charging. People don't just want electric scooters. They want easy electric scooters. Charging stations aren't everywhere yet, and that makes people nervous. Some said battery swapping would help, which shows they're open, but only if it becomes convenient. Then there's the battery itself. [15] Range anxiety is real. Even if their daily travel fits within 50 to 80 km, they still worry. What if they need to go further? What if the battery degrades? What about replacement cost? And that replacement cost keeps coming up. People know batteries aren't cheap. That creates long-term hesitation. Price is another barrier, but in a slightly different way. [16] It's not that electric scooters are expensive overall. People actually recognize they save money over time. The problem is the starting price feels high. Then there's awareness. A lot of respondents weren't fully aware of government subsidies. That's a missed opportunity. If people don't know about financial support, they're judging the price without the full picture. And honestly, some barriers are just emotional. A few people mentioned liking the sound of petrol engines or the feel of riding them. That's not logical, but it's real. People don't always choose based on pure logic. So when you put it all together, the issue isn't that people dislike electric scooters. It's that too many small doubts add up. Fix those, and adoption probably increases much faster. As shown in Figure 6. [17]

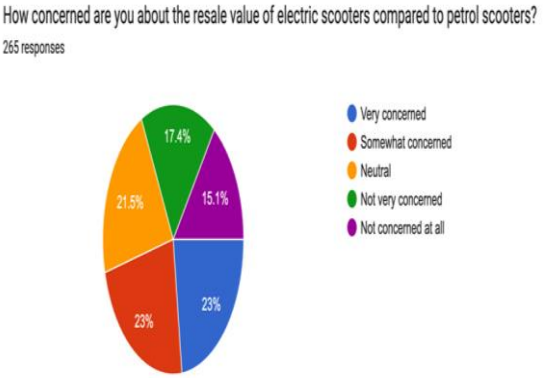

Figure 6 Responses of very Concerned or Not Concerned

5. Result and Findings

5.1.Result

The results are based on primary data collected through a structured questionnaire among youth in Patna. The survey was designed to understand not just preferences, but also the reasons behind them. So, it included questions on air quality awareness, health impact, cost, comfort, performance, and barriers related to electric scooters. The findings show that most respondents are aware of air pollution, and many have experienced health issues like breathing problems and irritation. However, regular monitoring of AQI is not very common. [18] In terms of decision-making, cost is an important factor. Respondents recognize that electric scooters are cheaper to run, but the high initial price remains a concern. Electric scooters are generally seen as comfortable for city use, but performance aspects like battery range and charging time create hesitation.

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Most respondents prefer a range of 50 to 80 km. When comparing options, petrol scooters are still preferred for their convenience and reliability, while electric scooters are seen as a future alternative. Many respondents believe their usage will increase in the coming years. The main barriers identified include lack of charging infrastructure, battery concerns, high upfront cost, and limited awareness about government subsidies. [19] The results can be presented using charts and tables to show awareness levels, preferences, and key barriers clearly.

5.2.Findings

The results show, it's not that people don't care about the environment. They clearly do. But caring alone is not enough to change behavior. What's happening here is a kind of trade-off. On one side, people understand that electric scooters are better for the environment and even cheaper in the long run. On the other hand, they still choose petrol because it feels easier and more reliable in everyday life. So, the issue is not awareness, it's convenience and trust. People are used to petrol scooters. They don't have to think before using them. [20] Electric scooters, however, still feel uncertain. Things like charging, battery life, and cost create small doubts, and those doubts are enough to stop people from switching. Another important thing is timing. The results suggest that people are not rejecting electric scooters, they're just not fully ready yet. Many believe that these vehicles will become common in the future, which means the mindset is already shifting. [21] So overall, the discussion shows that the transition has started, but it's slow. If practical issues like charging infrastructure, pricing, and awareness improve, people are likely to adopt electric scooters much more quickly.

Conclusion

The study shows that young consumers are aware of air pollution and its impact, and many of them are open to the idea of using electric scooters. They understand the environmental benefits and also recognize that electric vehicles are more economical in the long run. However, this awareness does not fully translate into action, as petrol scooters are still preferred for their convenience and reliability. Overall, the shift towards electric scooters has begun, but it is still gradual. Practical concerns like high initial cost, limited charging infrastructure, and battery-related issues continue to hold people back. [22] If these challenges are addressed and awareness about government support increases, the adoption of electric scooters is likely to grow much faster in the coming years.

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