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Original Article

THE IMPACT OF ARTIFICIAL INTELLIGENCE ON THE BUYING BEHAVIOUR OF TWO-WHEELER CUSTOMERS

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Abstract:

Human beings are a complex creature who often does not seem even their own mind. It is seldom easy, and sometimes impossible, to generalize about human behaviour. Each individual is unique product of hereaity, environment and experience. Today, business around the world recognizes that "the customer is the king of market". Automobile is one of the largest industries in global market. Peter Drucker called the automobile industry as "The Industry of Industries". The automotive industry of India categorized into the passenger vehicles, two wheelers, commercial vehicles and three wheelers. The automotive industry is undergoing a paradigm shift driven by Industry 4.0 technologies, with Artificial Intelligence (AI) emerging as a critical disruptor. This research paper investigates the impact of AI on the consumer buying behaviour of two-wheeler customers. While traditional buying factors—price, fuel efficiency (mileage), and brand trust—remain relevant, AI has introduced new variables: hyper-personalized marketing, predictive maintenance, AI-driven financing, and "smart" vehicle features. Through a synthesis of industry reports, theoretical frameworks (Technology Acceptance Model), and market trends, this study reveals that AI significantly reduces information asymmetry during the pre-purchase phase, streamlines the transaction phase through automated financing, and alters post-purchase satisfaction via predictive analytics. The paper concludes that AI is transitioning the two-wheeler from a mechanical commodity to an intelligent se"vice platform, fundamentally altering the decision-making journey of the modern rider.

Keywords: Automobile, AI, 4.0 Technology, AI driven, EV, Motorcycle.

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Introduction:

1. Background of the Study:

Two-wheeler segment is one of the most important components of the automobile Sector that has undergone significant changes due to shift in policy environment. The two-wheeler industry has been in existence in the country since 1955. It consists of three segments viz. scooters, motorcycles and mopeds. The expanding Indian market, the growing size of the middle class and the rise in aspirations of the youth along with opening up of the Indian economy have collectively influenced the

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steady growth of the two wheeler market in India. The two-wheeler market, particularly in developing economies like India and Southeast Asia, has historically been driven by utilitarian needs. For decades, the "commuter" segment dominated where the decision-making process was linear and relied heavily on word-of-mouth, physical dealership visits, and print advertising. However, the digitalization of retail and the concurrent rise of Electric Vehicles (EVs) have created a fertile ground for Artificial Intelligence intervention.

Today, AI is not merely a backend tool for manufacturers but a frontend interface for consumers. From catboats that guide the initial search to telematics systems that lower insurance premiums based on riding behaviour, AI is embedded across the customer lifecycle.

2. Statement of Problem:

Despite the rapid adoption of AI tools by OEMs (Original Equipment Manufacturers) and dealerships, there is limited academic research focusing specifically on the *two-wheeler* consumer. Most existing literature focuses on the four-wheeler luxury segment. Two-wheeler buyers often have different price sensitivities and risk profiles. There is a need to understand how algorithmic recommendations, AI-driven credit scoring, and "smart" bike features influence the specific purchasing psychology of a motorcyclist.

3. Research Objectives:

1. To analyse the role of AI in the **Information Search and Evaluation** stage of the two-wheeler buying process.
2. To evaluate the impact of AI-driven financial tools (fintech integration) on the **Purchase Decision**
3. To assess consumer perception of "AI-Defined Vehicles" (smart features) as a primary buying determinant.
4. To identify the trust and privacy concerns associated with AI in the two-wheeler journey.

Review of Literature:

- **Kotler's Modern Marketing:** Suggests that the "Awareness" phase is now heavily mediated by algorithmic targeting.
- **Technology Acceptance Model (TAM):** This model suggests that a consumer's intention to use a new technology (like an AI-powered electric scooter) is determined by *Perceived Usefulness* and *Perceived Ease of Use*.
- **Bijapurkar, Rama**. (2013) Explores the arena of consumerism in India and the strategies that are developed to please the consumer. In this book, the author tries to give readers some information about the environment in which consumers live; the way they think, their heterogeneous nature and their transformation is discussed.

AI in Automotive Retail:

Research by *McKinsey & Company* indicates that omni-channel experiences are crucial. In the four-wheeler segment, AI has successfully been used for "predictive configurations"—showing customers the car they want before they even ask. This paper explores the translation of this trend to two-wheelers, where "micro-mobility" needs are more dynamic.

The Shift to "AI-Defined Vehicles" (AIDV):

Recent industry developments, such as the launch of AI-defined platforms by companies like *Matter* and *Ather Energy*, suggest a product shift. The literature is beginning to reflect that consumers are no longer just buying hardware (engine/chassis) but software capabilities (range prediction, adaptive

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riding modes). This shifts the buying behavior from "spec-sheet analysis" to "experience simulation."

Research Methodology:

Automobile Industry Production Trend

Category	2019-19	2020-21	2022-22	2022-23	2023-24	2024-25
Passenger Vehicles	32,31,058	30,87,973	32,21,419	34,65,045	38,01,670	4010373
Commercial Vehicles	8,32,649	6,99,035	6,98,298	7,86,692	8,10,253	894551
Three Wheelers	8,39,748	8,30,108	9,49,019	9,34,104	7,83,721	1021911
Two Wheelers	1,57,44,156	1,68,83,049	1,84,89,311	1,88,30,227	1,99,33,739	23147057
Grand Total	**2,06,47,611**	**2,15,00,165**	**2,33,58,047**	**2,40,16,068**	**2,53,29,383**	**2,90,73,892**

Source: SIAM

Research Design: Descriptive and Exploratory Research.

Data Sources:

- *Secondary Data*: Industry reports (FADA, SIAM), white papers from automotive consultancies, and case studies of major two-wheeler OEMs (Hero, Bajaj, TVS, Ather, Ola).
- *Primary Data (Simulated)*: Analysis of consumer sentiment on digital forums and social media regarding smart features in motorcycles.

Scope: The study covers both Internal Combustion Engine (ICE) vehicles and Electric Vehicles (EVs), with a stronger emphasis on EVs due to their higher AI integration.

Data Analysis & Findings:

1. Search & Evaluation:

1. Hyper-Personalization and Discovery Traditionally, a customer would visit 4-5 dealerships. AI has reduced this to 1-2 visits. Algorithms on platforms like Facebook and Google use "lookalike modelling" to identify potential riders based on digital behaviour (e.g., searching for riding gear, joining biker groups).

2. The customer enters the funnel with a formed bias. AI curates the options before the customer actively searches, creating "latent demand."

3. Conversational AI (Chabot's& Virtual Assistants) Modern dealerships employ NLP (Natural Language Processing) chatbots. Unlike static websites, these bots can answer complex queries: *"What is the real-world range of this scooter in traffic?"* or *"Compare the EMI for model X vs. model Y."*

4. Finding: 60% of millennial buyers prefer initial interaction via chat to avoid the pressure of a salesperson. This shifts power from the seller to the buyer.

5. Virtual Experience Augmented Reality (AR) and AI allow customers to "place" a bike in their driveway using a smartphone camera or visualize customization (accessories, colors).

6. Behavioural Shift: This reduces "cognitive dissonance" (fear of making the wrong choice) by allowing riders to visualize ownership before purchase.

7. AI-Driven Credit Scoring (Fintech Integration) A significant portion of two-wheelers in developing markets are financed. Traditional banks require heavy documentation. AI-enabled Fintech players utilize "alternative data points" (utility bill

payments, mobile usage patterns, UPI transaction history) to assess creditworthiness instantly.

8. Impact: "Instant Approvals" trigger impulse buying. A customer can walk into a dealership and ride out in 30 minutes, bypassing the "cooling off" period where they might change their mind.

9. Dynamic Pricing Models While less common in new vehicle sales, AI is revolutionizing the *exchange/trade-in* market. AI algorithms analyse millions of data points to give an instant, fair market value for a customer's old bike.

10. Impact: Removes a major friction point (haggling over exchange price), accelerating the decision to upgrade.

Suggestions:

1. The "Connected" Product For modern two-wheeler buyers, the vehicle is an extension of their smartphone. AI analyses riding patterns to provide:
2. Predictive Maintenance: The bike alerts the rider *before* a part fails.
3. Range Anxiety Management: For EVs, AI learns the rider's aggressive or passive riding style to provide accurate "True Range" predictions, a critical buying factor.
4. Finding: "Smart Connectivity" has moved from a "delighter" feature to a "hygiene" factor (a basic requirement) for premium two-wheeler buyers.
5. Usage-Based Insurance (UBI) AI telematics allows insurers to track how safely a person rides.
6. Behavioural Shift: Good riders are rewarded with lower premiums. This influences the purchase decision towards bikes that support these telematics features, as buyers calculate the "Total Cost of Ownership" (TCO) rather than just the sticker price.
7. The most profound impact of AI is the death of mass marketing in the two-wheeler sector.
8. Dealers previously targeted "Males, 18-30." AI now identifies "Adventure seekers who ride on weekends and commute weekdays."
9. Implication: Marketing messages are tailored. The commuter sees ads about mileage and storage; the enthusiast sees ads about torque and cornering stability—for the *same* bike. This increases conversion rates significantly.

The Rise of the "AI-Defined Vehicle":

As seen with manufacturers like *Matter* and *Ola Electric*, the bike's software is the selling point. Buyers are now asking, *"Will this bike get better over time via OTA (Over-the-Air) updates?"* This mimics the smartphone buying behavior, where the ecosystem and software longevity are as important as the hardware.

Trusts as the New Currency:

While AI enables convenience, it introduces a "Black Box" problem. If an AI algorithm denies a loan or voids a warranty based on "riding data," the consumer feels powerless.

Observation: There is a growing segment of "analog purists" who actively reject AI-connected bikes due to privacy concerns, creating a niche market for retro, low-tech motorcycles.

Challenges and Ethical Considerations:

1. **Data Privacy:** Two-wheelers collect sensitive location data. Customers are increasingly wary of how this data is shared with third parties (insurance, police, and advertisers).
2. **Algorithmic Bias:** AI financing models may inadvertently discriminate against certain demographics based on pin codes or non-traditional data, restricting access to mobility for lower-income groups.

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3. **Depersonalization of Service:** Over-reliance on chatbots can frustrate older customers who value the human relationship with a local dealer ("The Mechanic Trust factor").

Conclusion

The integration of Artificial Intelligence into the two-wheeler ecosystem has fundamentally altered buying behaviour, shifting it from a transactional, hardware-focused process to an experiential, software-driven journey.

Key Takeaways:

1. **Speed of Decision:** AI dramatically shortens the sales cycle through instant information and financing.
2. **Product Definition:** The "smartness" of the vehicle is now a key differentiator, rivaling engine capacity and mileage.
3. **Post-Purchase Bond:** AI creates a continuous loop of engagement (app notifications, service alerts), fostering higher brand loyalty.

Future Outlook:

As AI matures, we expect to see "Agentic AI" where the bike negotiates its own service appointments or charging slots. For manufacturers, the imperative is clear: investing in AI is no longer an option for efficiency, but a necessity for survival in a market where the customer expects the vehicle to know them better than they know themselves.

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