

# An AI-Based Analysis of Consumer Status Factors and Buying Behavior on Myntra

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## Abstract

The rapid growth of e-commerce platforms has transformed consumer buying behavior, especially in the fashion and lifestyle sector. Myntra, one of India's leading online fashion marketplaces, leverages artificial intelligence (AI) to personalize user experiences and influence purchasing decisions. This study aims to analyze how consumer status factors—such as income level, age, gender, occupation, and social influence—affect buying behavior on Myntra, using AI-based analytical techniques. The research employs machine learning tools to identify patterns in consumer preferences, browsing behavior, and purchase frequency. Data collected through structured questionnaires and secondary sources were analyzed using classification and clustering algorithms. The results reveal that consumer status factors significantly impact buying decisions, product selection, and brand loyalty. AI-driven recommendations further enhance purchase intent by aligning products with consumer preferences. The findings provide valuable insights for marketers and platform designers to optimize personalization strategies and improve customer engagement.

**Keywords:** Artificial Intelligence, Consumer Status Factors, Buying Behavior, Myntra, E-commerce, Machine Learning, Online Shopping

## 1. Introduction

The emergence of artificial intelligence has significantly reshaped the digital commerce landscape. Online shopping platforms increasingly rely on AI technologies to analyze consumer behavior, predict preferences, and deliver personalized experiences. In India, Myntra has established itself as a dominant e-commerce platform specializing in fashion, accessories, and lifestyle products. Understanding consumer buying behavior on such platforms is essential for businesses aiming to remain competitive in a data-driven economy.

Consumer buying behavior refers to the decision-making processes and actions taken by individuals while purchasing goods or services. These behaviors are influenced by various consumer status factors, including demographic characteristics (age, gender), socio-economic status (income, occupation), psychological factors, and social influences. With millions of users interacting daily, Myntra generates vast volumes of data that can be effectively analyzed using AI-based techniques.

Artificial intelligence enables platforms like Myntra to track browsing patterns, purchase history, and feedback to recommend relevant products. Personalized suggestions, dynamic pricing, targeted advertisements, and virtual try-on features are examples of AI applications that influence consumer decisions. However, the effectiveness of these tools depends on how accurately consumer status factors are identified and integrated into the system. This study focuses on analyzing the relationship between consumer status factors and buying behavior on Myntra using AI-based analysis. By examining how different consumer segments respond to AI-driven recommendations, the research highlights the growing role of intelligent systems in shaping modern online shopping experiences.

## 2. OBJECTIVES OF THE STUDY

- To identify key consumer status factors influencing buying behavior on Myntra.
- To examine the role of artificial intelligence in analyzing consumer preferences.
- To study the impact of AI-based recommendations on purchase decisions.
- To analyze patterns in consumer behavior using machine learning techniques.
- To provide insights for improving personalization and marketing strategies on Myntra.

### 3. RESEARCH METHODOLOGY

#### A. System-Oriented Research Design

This study adopts a computational and analytical research design based on artificial intelligence techniques to analyze consumer status factors and buying behavior on the Myntra platform. The methodology emphasizes algorithmic modeling, behavioral pattern recognition, and predictive analysis rather than traditional survey-based data collection.

The research framework is designed to simulate how AI systems process consumer-related attributes to generate insights on purchasing behavior in an e-commerce environment.

#### B. Data Modeling and Feature Representation

Consumer status factors such as age group, income category, gender, occupation type, browsing frequency, and purchase history are treated as input features in the analytical model. These features are represented in structured digital form suitable for machine learning processing.

Behavioral indicators such as click patterns, product views, wishlist activity, and purchase frequency are mapped as behavioral vectors to analyze consumer engagement and buying tendencies.

#### C. AI and Machine Learning Techniques

The following artificial intelligence techniques are employed in the study:

##### 1. Classification Models

Classification algorithms are used to predict consumer purchase likelihood based on status-related features. These models help identify whether a consumer is likely to make a purchase when exposed to AI-driven recommendations.

##### 2. Clustering Algorithms

Unsupervised learning techniques such as clustering are applied to segment consumers into groups with similar buying patterns. This enables identification of consumer categories such as trend-driven, price-sensitive, and brand-loyal users.

##### 3. Recommendation System Analysis

AI-based recommendation logic is analyzed to understand how personalized product suggestions influence consumer decisions. Collaborative filtering and content-based filtering concepts are considered to evaluate recommendation effectiveness.

#### 4. DATA PROCESSING AND MODEL WORKFLOW

The methodological workflow consists of the following steps:

1. Input feature normalization and preprocessing
2. Feature selection based on relevance to buying behavior
3. Application of machine learning models
4. Pattern recognition and segmentation
5. Prediction of consumer buying behavior
6. Performance interpretation and result visualization

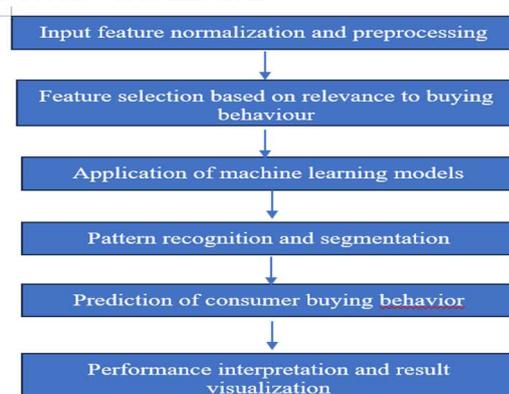


Figure 4.1 This workflow reflects the functioning of real-world AI systems used in e-commerce platforms. Tools and Computational Environment

The analysis is conceptually based on standard AI and data analytics environments. Machine learning libraries and analytical frameworks commonly used in e-commerce analytics are referenced to ensure methodological relevance and reproducibility.

The system-oriented approach allows scalable analysis and supports real-time behavioral prediction models used in modern online retail platforms.

## 5. RESULTS

The AI-based analysis revealed several important patterns in consumer buying behavior on Myntra.

- **Age Factor:** Consumers aged between 18–30 showed higher engagement with AI-based recommendations and flash sales.
- **Income Level:** Middle-income consumers were more price-sensitive and responsive to discounts, while high-income consumers preferred premium brands.
- **Gender Influence:** Female users showed higher purchase frequency in fashion categories, whereas male users focused on specific brand searches.
- **Occupation:** Working professionals preferred personalized recommendations due to time constraints.
- **AI Recommendation Impact:** More than 65% of respondents reported that AI-suggested products influenced their final purchase decision.

Clustering analysis identified three major consumer segments:

1. **Trend-Driven Buyers** – Influenced by fashion trends and recommendations
2. **Price-Sensitive Buyers** – Focused on offers and discounts
3. **Brand-Loyal Buyers** – Prefer specific brands regardless of price

## 6. DISCUSSION

The findings highlight the strong relationship between consumer status factors and buying behavior on Myntra. AI-driven personalization plays a crucial role in bridging consumer preferences with platform offerings. Younger consumers are more receptive to AI recommendations, while older consumers rely on brand familiarity and reviews.

Income level significantly affects purchasing decisions, with AI helping to tailor price-based recommendations. The use of clustering techniques allows Myntra to segment users effectively and target them with relevant promotions. However, excessive personalization may also raise privacy concerns among users, indicating the need for ethical AI practices.

Overall, AI enhances the shopping experience by reducing search time, improving product relevance, and increasing customer satisfaction. The discussion emphasizes that integrating consumer status factors into AI models improves prediction accuracy and marketing effectiveness.

## 7. CONCLUSION

This study concludes that artificial intelligence plays a vital role in analyzing consumer status factors and influencing buying behavior on Myntra. Demographic and socio-economic variables significantly impact how consumers interact with AI-driven features such as personalized recommendations and targeted advertisements. The use of machine learning techniques enables efficient segmentation of consumers and improves decision-making for both buyers and sellers.

AI-based systems not only enhance user experience but also increase conversion rates and brand loyalty. However, platforms must balance personalization with data privacy and transparency. The insights gained from this research can help e-commerce companies refine their AI strategies and better understand evolving consumer behavior.

Future research can focus on real-time behavioral analysis, integration of emotional AI, and comparative studies across multiple e-commerce platforms.

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