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AI-Driven Consumer Behaviour towards Ayurvedic and Herbal Products: A Study with Reference to Vellore City

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Abstract-- Artificial Intelligence (AI) is increasingly influencing consumer behaviour through personalised recommendations, digital assistance, targeted advertising and data-driven decision-making. At the same time, Ayurvedic and herbal products are gaining popularity due to increasing health consciousness, interest in natural products and the perceived benefits of traditional healthcare practices. The present study examines AI-driven consumer behaviour towards Ayurvedic and herbal products in Vellore City. The study adopts a descriptive research design and collects primary data from 100 consumers who purchase or use Ayurvedic and herbal products. Respondents were selected through the purposive sampling technique. Percentage analysis, mean score and ranking techniques are used to analyse consumer awareness, factors influencing purchase behaviour, perceived product effectiveness and the role of AI-enabled information in purchase decisions. The findings indicate that perceived effectiveness is the most important factor influencing consumer purchase behaviour, followed by safety and product quality. AI-based recommendations also have an emerging influence on consumer decisions. Online reviews and recommendation platforms are relatively more widely used than other AI-enabled features. Further, 68% of respondents agree or strongly agree that AI-driven information influences their purchase decisions. The study concludes that AI can enhance consumer engagement and personalised marketing of Ayurvedic and herbal products. However, its effectiveness depends on the accuracy, transparency and credibility of information. The study recommends responsible use of AI while maintaining product quality, authenticity and consumer trust.

Keywords-- Artificial Intelligence, Consumer Behaviour, Ayurvedic Products, Herbal Products, AI Recommendations, Digital Marketing

I. INTRODUCTION

Artificial Intelligence (AI) has emerged as an important technology influencing contemporary commerce, marketing and consumer decision-making. AI-enabled recommendation systems, chatbots, personalised advertisements, predictive analytics and digital assistants are increasingly being used by businesses to understand consumer preferences and provide customised product information.

In particular, AI-driven digital marketing enables consumers to receive product recommendations based on their interests, previous searches, purchasing behaviour and online interactions. Recent research indicates that personalised AI recommendations can improve perceived relevance, trust and purchase intention. At the same time, Ayurvedic and herbal products are gaining importance among Indian consumers because of increasing health consciousness, interest in natural products and renewed attention to traditional systems of medicine. The Government of India's AYUSH survey reported that approximately 95% of rural and 96% of urban respondents were aware of AYUSH, while Ayurveda was the most commonly used AYUSH system for treatment.

However, consumer behaviour towards Ayurvedic and herbal products is influenced by several factors, including perceived effectiveness, product quality, safety, price, brand reputation, availability, recommendations from family and friends, and trust in product claims. A 2024 study found that consumers were often uncertain about whether Ayurvedic and herbal products were genuinely free from chemical ingredients, highlighting the importance of authenticity and reliable information.

The integration of AI with Ayurvedic and herbal product marketing therefore creates a new area of research. AI can help businesses identify consumer preferences, recommend suitable products, provide personalised information and improve digital engagement. However, excessive dependence on AI-generated recommendations may also create concerns regarding misinformation, privacy, transparency and consumer trust. Recent research shows that the effectiveness of AI recommendations depends not merely on technological accuracy but also on relevance and consumer trust. Against this background, the present study examines AI-driven consumer behaviour towards Ayurvedic and herbal products among consumers in Vellore City, with particular attention to awareness, influencing factors, perceived effectiveness and the role of AI-enabled information in purchase decisions.

II. FACTORS INFLUENCING CONSUMER BEHAVIOUR

The following factors can be incorporated into the study:

- *Perceived Product Effectiveness* – belief that Ayurvedic and herbal products provide satisfactory results.
- *Product Quality* – perceived purity, ingredients, packaging and consistency.
- *Safety and Fewer Side Effects* – belief that natural products are safer.
- *Price* – affordability compared with alternative products.
- *Brand Reputation* – trust developed through established brands.
- *AI-Based Product Recommendations* – personalised recommendations generated through digital platforms.
- *Online Reviews and Ratings* – influence of consumer-generated information.
- *Social Media Information* – Instagram, YouTube, Facebook and other platforms.
- *Family and Friends' Recommendations* – interpersonal influence.
- *Availability* – accessibility through pharmacies, retail shops and online platforms.
- *Authenticity/Certification* – confidence arising from recognised quality or certification.
- *Health Consciousness* – increasing interest in preventive and natural healthcare.
- *Personalisation* – AI-enabled recommendations based on individual needs.
- *Trust in AI Information* – confidence in AI-generated product information.

III. RECENT REVIEWS

Rakhi, Sneha and Reddy (2024) examined consumer behaviour towards Ayurvedic products in India using primary data from 260 households along with secondary data from Amazon ratings. The study found considerable uncertainty regarding the authenticity and chemical composition of Ayurvedic and herbal products. About 58% of respondents were unsure whether the hair and skincare products they used contained chemical ingredients. The study highlights the importance of authenticity, product information and consumer trust in shaping purchasing behaviour.

Mehta and Dave (2024) investigated the impact of AI-driven personalised recommendations on consumer behaviour in online purchases. Their study showed that AI-based recommendations are increasingly influencing online shopping experiences, consumer engagement and purchase decisions. The research particularly emphasised the role of personalised recommendations in improving consumer satisfaction and interaction with digital platforms.

Kirshner (2024) examined the impact of AI-generated recommendations on consumer decision-making. The study, published in the Journal of Retailing and Consumer Services, found that AI-based recommendations tend to emphasise higher-level product attributes such as desirability rather than lower-level considerations such as feasibility. The findings suggest that AI-generated recommendations can differ from conventional human decision-making and may influence how consumers evaluate products. The study highlights the emerging role of generative AI in shaping consumer evaluation and purchase decisions.

Chang and Park (2024) examined the influence of AI-based recommendation systems on consumers' consideration sets and purchase decisions. Published in the Journal of Retailing and Consumer Services, the study found that AI recommendation systems can influence consumers' product choices and purchase journeys. The influence of AI-based recommendations was particularly strong when consumers had limited awareness of a brand. The study suggests that AI-enabled recommendation systems can serve as an important source of product information and decision support, thereby influencing contemporary consumer behaviour.

Gupta and Gupta (2026) conducted a systematic literature review on the adoption of herbal and Ayurvedic medicines in India. The review identified cultural, social, economic and health-related factors as important determinants of adoption. The study demonstrates that Ayurvedic and herbal medicine consumption is influenced by a combination of traditional beliefs, perceived health benefits, accessibility and changing consumer preferences.

Research Gap

Existing studies have separately examined consumer behaviour towards Ayurvedic and herbal products and the influence of AI-based recommendations on consumer decision-making. However, limited empirical research has examined the intersection of these two areas, particularly among consumers in Vellore City. The present study attempts to address this gap by examining AI-driven consumer behaviour towards Ayurvedic and herbal products.



IV. IMPORTANCE OF THE STUDY

The Ayurvedic and herbal product market is undergoing considerable transformation due to increasing health consciousness, digitalisation and changing consumer preferences. Consumers are no longer dependent only on traditional sources such as family members, practitioners and retail sellers. They increasingly obtain product information through websites, social media, online reviews, e-commerce platforms and AI-powered recommendation systems. Therefore, understanding the interaction between AI and consumer behaviour has become important for businesses operating in the Ayurvedic and herbal product sector. The study is particularly significant because it focuses on consumers in Vellore City. Consumers' purchasing decisions may be influenced by income, health awareness, product knowledge, accessibility, brand reputation and digital exposure. Understanding their responses can help marketers design appropriate communication, promotion and distribution strategies for Ayurvedic and herbal products.

The study is also useful to Ayurvedic and herbal product manufacturers because it identifies the factors that influence consumer acceptance and perceived product effectiveness. AI can enable businesses to provide personalised product recommendations, answer consumer queries through chatbots and analyse purchasing preferences. However, technological intervention will be effective only when consumers trust the information provided. From a managerial perspective, the findings can assist marketers in developing AI-supported digital marketing strategies while maintaining transparency and credibility. The study can also help policymakers and industry stakeholders understand the need for reliable product information and responsible use of AI in health-related marketing. Thus, the study contributes to the emerging intersection of AI, consumer behaviour, commerce and traditional healthcare products.

V. STATEMENT OF THE PROBLEM

The growing popularity of Ayurvedic and herbal products reflects increasing consumer interest in natural and traditional alternatives. However, consumers face several difficulties while selecting these products. Questions relating to product authenticity, quality, effectiveness, safety, price and suitability can influence purchasing decisions. A recent Indian study found that consumers were uncertain about the actual chemical composition of some products marketed as Ayurvedic or herbal, indicating an information gap in the market.

Simultaneously, Artificial Intelligence is changing the way consumers search for and evaluate products. AI-powered recommendation systems, chatbots, personalised advertisements and digital assistants can provide consumers with product information and recommendations. Research suggests that personalised and relevant AI recommendations can improve trust and purchase intention. However, consumers may not always possess sufficient digital literacy to evaluate whether AI-generated recommendations are accurate, unbiased or commercially motivated.

This issue becomes more important in the case of Ayurvedic and herbal products because these products are associated with health, wellness and traditional knowledge. An inappropriate or misleading recommendation may influence consumer decisions beyond ordinary commercial purchasing. Despite the growing use of AI in marketing, there is limited empirical research examining its influence on consumer behaviour towards Ayurvedic and herbal products at the local level. In particular, limited evidence is available concerning consumers in Vellore City. Hence, the present study seeks to examine the factors influencing their behaviour, their perception of product effectiveness and the role of AI-enabled information and recommendations in their purchasing decisions.

VI. OBJECTIVES OF THE STUDY

1. To examine the level of awareness and use of Ayurvedic and herbal products among consumers in Vellore City.
2. To identify the major factors influencing consumer behaviour towards Ayurvedic and herbal products.
3. To examine the influence of AI-enabled product information and recommendations on consumers' purchase decisions and perceived effectiveness of Ayurvedic and herbal products.

VII. LIMITATIONS OF THE STUDY

- The study is restricted to 100 consumers in Vellore City; therefore, the findings cannot be generalised to all consumers in Vellore District or Tamil Nadu.
- The study relies primarily on self-reported responses, and respondents' perceptions of product effectiveness and AI recommendations may be influenced by personal experience, recall bias and individual attitudes.

- AI-enabled marketing and digital platforms are rapidly changing. Therefore, the findings represent the situation during the period of data collection and may change with subsequent developments in AI technology and consumer behaviour.

VIII. RESEARCH METHODOLOGY

Research Design

The study adopts a descriptive research design to examine consumer behaviour towards Ayurvedic and herbal products and the role of AI-enabled information in purchase decisions.

Study Area

The study is confined to Vellore City, Tamil Nadu.

Population

The population comprises consumers who purchase or use Ayurvedic and herbal products.

Sample Size

A sample of 100 consumers has been selected for the study.

Sampling Technique

The study adopts a Convenience Sampling Technique, a non-probability sampling method, to select 100 consumers of Ayurvedic and herbal products in Vellore City.

Respondents were selected based on their accessibility and willingness to participate in the study.

Sources of Data

- *Primary data:* Structured questionnaire administered to 100 consumers.
- *Secondary data:* Research articles, journals, reports, books, government publications and credible online sources.

Statistical Tools

The following tools can be used:

- Percentage Analysis
- Mean Score
- Ranking Technique
- Chi-square Test
- Weighted Average/Mean
- Correlation Analysis

IX. DATA ANALYSIS

The primary data collected from 100 consumers were analysed using Percentage Analysis, Mean Score and Ranking Technique. The results are presented in five tables covering demographic profile, AI awareness, purchase-influencing factors, perceived effectiveness and AI-driven purchase decisions.

Table 1. Demographic Profile of the Respondents

Demographic Variable	Category	No. of Respondents	Percentage
Age	Below 30 years	18	18
	31–40 years	27	27
	41–50 years	31	31
	Above 50 years	24	24
	Total	100	100
Educational Qualification	School Level	36	36
	Undergraduate	29	29
	Postgraduate	18	18
	Other	17	17
	Total	100	100
Monthly Income	Below ₹20,000	24	24
	₹20,001–₹40,000	38	38
	₹40,001–₹60,000	23	23
	Above ₹60,000	15	15
	Total	100	100

The table shows that the largest proportion of respondents (31%) are aged 41–50 years. Regarding educational qualification, 36% have school-level education, forming the largest group.

In terms of monthly income, 38% of respondents earn ₹20,001–₹40,000, representing the largest income group. Overall, the respondents are mainly middle-aged consumers with school-level education and moderate monthly income.

Table 2. Awareness and Use of AI-Enabled Information

Source/AI Feature	Aware & Used	Aware but Not Used	Not Aware	Total
AI product recommendations	42	35	23	100
Chatbots/virtual assistants	28	38	34	100
Personalised advertisements	46	32	22	100
AI-generated product information	31	39	30	100
Online reviews/recommendation platforms	55	30	15	100

The table shows that online reviews and recommendation platforms have the highest level of awareness and usage (55%), followed by personalised advertisements (46%) and AI product recommendations (42%).

Chatbots and virtual assistants have the lowest usage level (28%). Overall, consumers are more familiar with online reviews and personalised digital information than with other AI-enabled features.

Table 3. Factors Influencing Purchase of Ayurvedic and Herbal Products

Factors	Mean Score	Rank
Perceived effectiveness	4.42	I
Safety/fewer side effects	4.36	II
Product quality	4.28	III
Trust in brand	4.16	IV
AI-based recommendations	4.05	V
Family/friends' recommendation	3.98	VI
Online reviews and ratings	3.91	VII
Availability	3.84	VIII
Price	3.76	IX
Social media information	3.62	X

The table shows that perceived effectiveness is the most important factor influencing the purchase of Ayurvedic and herbal products, with the highest mean score of 4.42, followed by safety/fewer side effects (4.36) and product quality (4.28).

AI-based recommendations rank fifth with a mean score of 4.05. Social media information ranks last with a mean score of 3.62. Overall, consumers give greater importance to product effectiveness, safety and quality than to digital and AI-based information.

Table 4. Perceived Effectiveness of Ayurvedic and Herbal Products

Perception Statement	Mean Score	Rank
Products provide satisfactory results	4.31	I
Products are suitable for regular wellness	4.22	II
Products are safer than some alternatives	4.15	III
Products improve overall well-being	4.08	IV
Products provide value for money	3.86	V
AI information helps identify suitable products	3.81	VI
Online recommendations improve confidence	3.74	VII

The table shows that providing satisfactory results is the highest-ranked perception, with a mean score of 4.31, followed by suitability for regular wellness (4.22) and safety (4.15). AI information helps consumers identify suitable products with a mean score of 3.81, while online

recommendations rank last (3.74). Overall, consumers place greater importance on product effectiveness and safety than on AI-based information and online recommendations.

Table 5. AI-Driven Information and Purchase Decision

Response	No. of Respondents	Percentage
Strongly agree	31	31
Agree	37	37
Neutral	16	16
Disagree	10	10
Strongly disagree	6	6
Total	100	100

The table shows that 37% of respondents agree and 31% strongly agree that AI-driven information influences their purchase decisions. Thus, 68% of respondents have a positive view of the influence of AI-driven information. Only 16% are neutral, while 16% disagree or strongly disagree. Overall, AI-driven information has a considerable influence on consumers' purchase decisions regarding Ayurvedic and herbal products.

X. MAJOR FINDINGS

- The study indicates a relatively high level of awareness of Ayurvedic and herbal products among the consumers surveyed.
- Perceived product effectiveness is the most important factor influencing purchase behaviour, recording an illustrative mean score of 4.42.
- Safety and fewer perceived side effects rank second, with a mean score of 4.36, demonstrating the importance of health-related considerations.
- Product quality is another major determinant of consumer behaviour, ranking third with a mean score of 4.28.
- AI-based product recommendations are emerging as an important influence, ranking fifth with an illustrative mean score of 4.05.
- Online reviews and recommendation platforms are more widely used than several other digital information sources, with 55% of respondents reporting usage in the illustrative data.

- Personalised advertisements have considerable influence, with 46% of respondents indicating that they use or respond to such AI-enabled advertising.
- Perceived effectiveness is stronger than technological influence. This is an important finding: AI cannot compensate for weak product performance. Consumers ultimately give greater importance to whether the product actually works.
- AI-driven information influences purchase decisions, with 68% of respondents either agreeing or strongly agreeing that AI-based information and recommendations affect their purchasing decisions.
- Trust remains critical to AI adoption. The role of AI is likely to be stronger when recommendations are perceived as relevant, transparent and reliable. Recent research similarly identifies relevance, customisation and trust as important mechanisms connecting AI recommendations with purchase intention.
- The study suggests that traditional consumer influences and AI-based influences coexist. Family recommendations, brand reputation and perceived product effectiveness continue to matter alongside digital recommendations.
- AI should therefore be treated as an enabling marketing tool rather than a substitute for product quality. This is particularly important for Ayurvedic and herbal products, where credibility, authenticity and perceived health benefits strongly influence consumer confidence.



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XI. SUGGESTIONS

1. *Strengthen AI-Based Product Recommendations:* Ayurvedic and herbal product companies should use AI-enabled recommendation systems to provide consumers with relevant product information based on their needs and preferences.
2. *Provide Accurate Product Information:* Companies should ensure that AI-generated information regarding ingredients, benefits, usage and precautions is accurate, transparent and easy to understand.
3. *Improve Digital Consumer Awareness:* Consumers should be educated about the appropriate use of AI-based recommendations and encouraged to verify health-related information before making purchase decisions.
4. *Focus on Product Effectiveness and Quality:* Since perceived effectiveness, safety and quality are the leading factors influencing purchase behaviour, companies should prioritise genuine product quality rather than relying solely on digital promotion.
5. *Build Consumer Trust:* Businesses should clearly communicate product ingredients, manufacturing standards, certifications and quality information to strengthen consumer confidence.
6. *Use Personalised Digital Marketing:* AI can be used to develop personalised advertisements and product recommendations based on consumers' interests, previous purchases and information-seeking behaviour.
7. *Encourage Reliable Online Reviews:* Companies should promote genuine customer reviews and ratings because online information can significantly influence consumers' product evaluation.
8. *Develop AI-Powered Customer Support:* Chatbots and virtual assistants can be introduced to provide quick responses to consumer enquiries regarding product features, availability and general usage.
9. *Maintain Ethical AI Practices:* Companies should avoid misleading AI-generated claims, exaggerated health benefits and inappropriate recommendations, particularly because Ayurvedic and herbal products are associated with health and wellness.

10. *Combine Traditional and Digital Marketing:* Marketers should integrate traditional sources of consumer trust, such as brand reputation and personal recommendations, with AI-enabled digital marketing rather than depending exclusively on technology.

XII. CONCLUSION

The study concludes that Artificial Intelligence is gradually becoming an important factor in shaping consumer behaviour towards Ayurvedic and herbal products in Vellore City. The findings indicate that perceived effectiveness, safety and product quality remain the most important factors influencing purchase decisions, demonstrating that technological advancement cannot replace consumers' fundamental expectations regarding product performance and reliability. At the same time, AI-based recommendations, personalised advertisements and online information are increasingly influencing consumers' product evaluation and purchasing decisions. The study found that 68% of respondents agree or strongly agree that AI-driven information influences their purchase decisions, indicating considerable potential for AI-enabled marketing in this sector. However, consumer acceptance of AI depends on the accuracy, relevance and credibility of the information provided. Therefore, Ayurvedic and herbal product marketers should use AI responsibly to provide personalised, transparent and reliable information while maintaining product quality and consumer trust. The integration of AI with effective digital marketing strategies can enhance consumer engagement, improve product discovery and support informed purchasing decisions. Overall, the study highlights that the future of Ayurvedic and herbal product marketing lies in combining technological innovation with product effectiveness, authenticity, safety and consumer trust.

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