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AI IN HEALTH SECTOR : "ROLE OF ARTIFICIAL INTELLIGENCE IN CHANGING CONSUMER BEHAVIOUR TOWARDS PURCHASING OF MEDICINES ONLINE AND OFFLINE

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Abstract:

Artificial Intelligence (AI)-enabled technology was incorporated by e-commerce companies to determine the demands and preferences of their customers with regard to online goods and services. The artificial intelligence keeps track of the consumer's choices, tastes, and shopping habits. It also tracks how frequently the customer makes purchases and how much they spend on average over a given time frame. E-commerce companies can access comprehensive client data from it. Because of this, companies are able to customize their goods and services to meet the unique requirements and tastes of their clients. By offering a variety of product suggestion, discount, and numerous offer tactics, the AI helps the consumer to choose and buy the best recommended goods and services

Artificial Intelligence (AI) is transforming the sale of pharmaceuticals by impacting consumer choices in both online and physical pharmacy industries. Predictive analytics, virtual assistants, and AI-powered recommendation engines are changing how people buy medications. This study compares online and offline buying preferences to examine how AI is affecting consumer behavior. Convenience, cost, trust, and accessibility are looked at, and the difficulties in using AI, such as data protection and legal issues, are evaluated. The study sheds light on how AI might improve the retail of medications and what that means for upcoming patterns in pharmaceutical consumption.

Keywords: *E-Pharmacy, Machine Learning, Digital Healthcare, Online and Offline Pharmacy, Artificial Intelligence, Consumer Behavior, and Customized Suggestions*

Introduction:

The recent growth of e-commerce in India has attracted the customer to purchase medicine from online websites. The online drug store is one of the items which is going to encourage a gigantic interest in impending days. An online drug store is a web-based merchant of physician recommended drugs. The sale of medicine through an online platform is not new. It has quite recently thrived in this internet age.

Consumer behaviour is the study of process which involves purchase, use, or dispose of products, services, ideas, to satisfy needs and desires.

Consumers' habits have changed over the past decade. The use of internet technology to research, browse and purchase has gone. This has resulted in an undeniable and no reversible shift in the consumers' behaviour. This study focuses on how consumers use technology and their expectations from various websites for online delivery of medicine

In recent years, the digital landscape has significantly changed the way consumers engage in purchasing goods and services from various online websites including pharmaceuticals. With the rise of online pharmacies, consumers now have the convenience of purchasing medicines from the comfort of their homes. This shift in consumer behavior towards online

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medicine purchases is particularly notable in urban areas like Mumbai Suburban, where access to traditional pharmacies might be challenging due to traffic congestion and time consuming.

The integration of AI in the healthcare sector is revolutionizing pharmaceutical retail and consumer purchasing behaviour. AI-driven tools such as chatbots, recommendation systems, virtual health assistants, and predictive analytics are enhancing consumer experiences in online and offline pharmacy environments. The growing adoption of AI in e-pharmacies and traditional drug stores necessitates an in-depth study of its impact on consumer choices.

Objectives:

- To Study awareness among consumer about role of AI in helping medicine purchase.
- To Study Role of AI in influencing consumer decision-making for online and offline medicine buying.
- To Study challenges faced by consumers while online purchase.
- To study consumer trust and perceptions regarding AI for medicine purchase .

Significance of study :

- Increased accessibility to medicines, particularly for individuals in remote areas.
- Enhanced safety through AI-driven authentication and fraud detection.
- Greater affordability due to AI-enabled dynamic pricing and personalized discount offerings.
- Emphasizes the importance of consumer education on AI-driven healthcare services.
- Encourages development of robust cybersecurity measures to protect consumer data.

Hypothesis:

- H_0 (Null Hypothesis): Artificial Intelligence does not significantly influence consumer behaviour in purchasing medicines online and offline.
- H_1 (Alternative Hypothesis): AI-driven recommendations and personalization impact consumer preferences for online medicine purchases.
- H_2: Consumers who prefer offline medicine purchases value human interaction and trust over AI-driven recommendations.
- H_3: AI-powered chatbots and predictive analytics enhance consumer satisfaction in online pharmacy services.

Scope of study :

AI is reshaping pharmaceutical retail by offering personalized, efficient, and cost-effective solutions in both online and offline settings. While AI enhances accessibility and streamlines operations, regulatory concerns and consumer trust issues remain barriers to full adoption. Future research should focus on improving AI transparency, developing robust regulatory frameworks, and enhancing consumer confidence in AI-powered pharma retail solutions.

Limitations of the study :

- The finding of the research may be specific to the western region of Mumbai suburban.
- The research focuses primarily on factors changing consumers behaviour for online medicine purchase ,however it can not capture word of mouth or other which can influence consumer behaviour.
- Research is based on consumers who prefer to purchase online medicine.

Research Methodology:

Data collection:

The research is based on the primary as well as secondary data which I have collected through the questionnaires and secondary data is collected from internet.

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Sampling:

The method I have used to collect data is random sampling method for this I had choose 50 people. As the desired result of this research was to find out consumers behaviour when purchasing of medicines Online and Offline"

Questionnaire Preparation:

With the world gone digital, many things have become easier and are available at hand. Targeting a sample size of 50 with a hard copy questionnaire would be pretty hard to collect. But with google form, many things have become easier. The whole questionnaire is prepared in a google form, which actually has made a lot of things easier for the research.

Review of Literature:

Bhattacharya et al., 2023.AI has significantly improved online pharmacy platforms by enabling personalized recommendations, automated prescription verification, and AI-driven customer support.

Malhotra & Nair, 2022. While AI-driven verification systems enhance medicine authenticity, concerns regarding data privacy and cybersecurity threats deter some consumers from fully trusting online pharmacies

Jain & Patel, 2022.AI enables dynamic pricing models in online pharmacies, offering competitive discounts and personalized pricing strategies. In contrast, offline pharmacies provide direct pharmacist discounts and loyalty programs to retain customers

Patel & Sharma, 2022. Machine learning algorithms analyse consumer behaviour to suggest suitable medications and predict future purchases, enhancing customer engagement

Kumar et el 2021. Traditional pharmacies utilize AI for inventory management, demand forecasting, and AI-assisted pharmacist consultations. AI-driven point-of-sale systems optimize supply chains, reducing medicine shortages and enhancing service quality

Singh & Agarwal, 2021.AI-powered online pharmacies offer round-the-clock services, automated refills, and doorstep delivery, making medicine access more convenient .However, offline pharmacies attract consumers who prefer in-person pharmacist consultations.

Data Analysis:

Summary table of the demographic and basic information of the respondents:

Questions	Responses	Total
Age Group	18-25 years	15
	26-35 years	20
	36-45 years	10
	46+ years	5
Gender	Male	28
	Female	22
Education Level	High School	8
	Undergraduate	20
	Postgraduate	15
	Others	7
Geographical area	Urban	35
	Suburban	15

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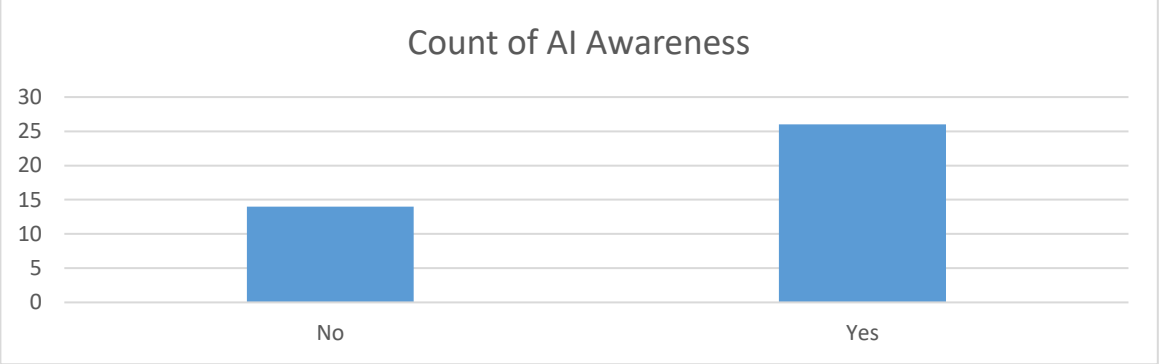
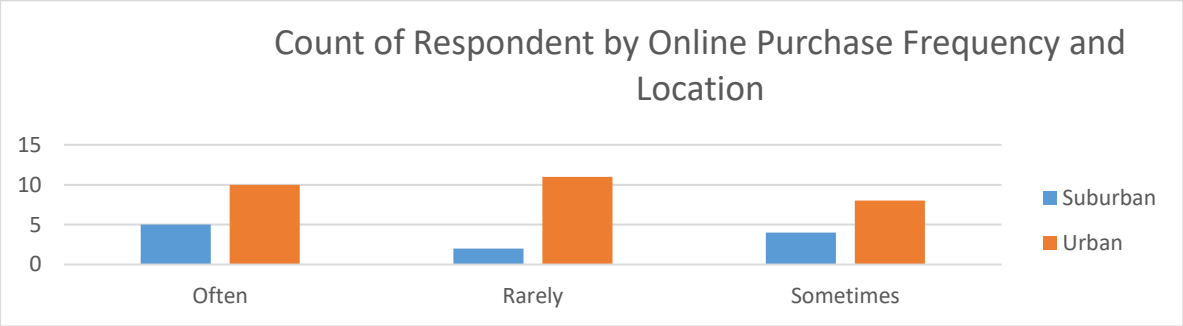
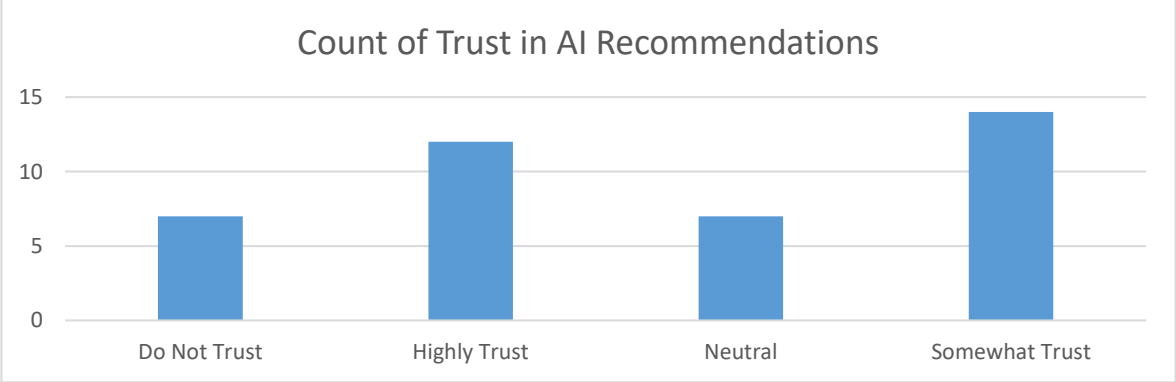
Graph 1



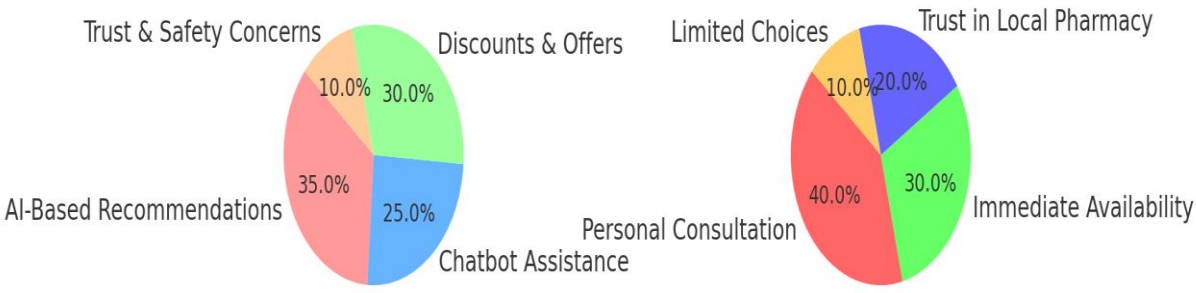
Graph 2



Graph 3



Pie Chart



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Conclusion:

Artificial Intelligence (AI) is significantly transforming consumer behavior in the pharmaceutical sector by enhancing decision-making, personalization, and accessibility. Online platforms leverage AI-driven recommendations, chatbots, and predictive analytics to offer tailored suggestions, while offline pharmacies integrate AI for inventory management and improved customer service. The increasing trust in AI-enabled platforms is shifting consumer preferences towards online medicine purchases, yet concerns about authenticity and personal consultation keep offline purchases relevant. The future will likely see a hybrid model where AI enhances both online and offline purchasing experiences, ensuring efficiency, trust, and convenience for consumers.

AI is reshaping pharmaceutical retail by offering personalized, efficient, and cost-effective solutions in both online and offline settings. While AI enhances accessibility and streamlines operations, regulatory concerns and consumer trust issues remain barriers to full adoption. Future research should focus on improving AI transparency, developing robust regulatory frameworks, and enhancing consumer confidence in AI-powered pharma retail solutions.

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