Analyzing Consumer Perception Towards Online and Traditional Pharmacy

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ABSTRACT

As the pharmaceutical industry rapidly evolves, the way people access medication is undergoing a digital transformation. This study investigates how consumers perceive and interact with two main types of pharmacies traditional brick-and-mortar establishments and emerging online platforms. By exploring factors such as convenience, trust, affordability, digital literacy, and service quality, the research offers insights into shifting consumer behaviors and preferences.

A mixed-methods approach, including surveys and secondary literature analysis, was employed to capture a well-rounded perspective. While online pharmacies are appreciated for their convenience and wide product availability, traditional outlets remain valued for personalized service and reliability. The study highlights the growing importance of digital interfaces in healthcare while emphasizing the continued relevance of in-person interaction. Findings from this research provide valuable implications for pharmacy operators, healthcare policymakers, and digital health developers in enhancing customer experience and accessibility.

Keywords: Online pharmacy, traditional pharmacy, consumer behavior, healthcare access, digital platforms, India

Introduction

Healthcare in India is undergoing a major shift, and the way people access medicines is a part of that transformation. While traditional pharmacies the kind people have visited for years continue to play an essential role, online pharmacies are quickly gaining ground. These digital platforms offer convenience, home delivery, and often better price comparisons, which appeal to today's tech-savvy, time-conscious population. But with this shift come new concerns about trust, privacy, service quality, and authenticity.

India's pharmaceutical market, valued at over $50 billion in 2023, is not only vast but diverse. It's home to both high-tech urban centers and underserved rural areas, each with its own healthcare access challenges. The rise of e-pharmacies is seen as a potential solution to some of these problems, particularly in places where brick-and-mortar options are limited. At the same time, many people still prefer face-to-face interaction with a pharmacist, especially when managing complex or chronic conditions.

In this study, we wanted to explore how people really feel about both online and traditional pharmacies. What do they trust more? Which one do they use more often, and why? Does age, education, or digital familiarity influence their choices? We looked closely at these questions to understand not just what consumers prefer but also why they make the choices they do.

Our goal was to uncover the factors that influence consumer perception and satisfaction when it comes to accessing medicines. By looking at both digital and physical pharmacy models, we aimed to better understand what matters most to people today speed and convenience, or personal service and reliability? The findings could help improve services on both sides and support healthcare providers and businesses in creating systems that truly meet consumer needs.

Literature Review

The way people choose between online and traditional pharmacies is shaped by a mix of convenience, trust, digital comfort, and service expectations. Over the years, researchers have studied how technology influences healthcare decisions, especially in relation to e-pharmacies.

Trust has emerged as a central theme. Gefen et al. (2003) emphasized that even when online platforms are easy to use, consumers won't commit unless they trust the product and the provider. This trust becomes even more critical in healthcare, where safety and reliability are non-negotiable.

Convenience and cost are also major motivators. Liang and Yeh (2011) found that many consumers, especially younger ones, are drawn to online pharmacies because they save time, often offer better prices, and are easy to use. Similarly, Davis and Wilson (2020) explored the economic side, noting that while online pharmacies may be cheaper, delivery delays and shipping charges can affect consumer satisfaction.

However, not everyone is equally comfortable with digital healthcare. Lin and Zhang (2021) highlighted how older adults often hesitate to use online services due to poor tech literacy or design issues. They found that when apps are simplified and support is available, seniors are more willing to make the switch.

Privacy and data security are major concerns. Miyazaki and Fernandez (2001) showed that when consumers are asked to share sensitive medical information online, perceived risk can deter them unless platforms offer strong security and transparent policies.

Interestingly, service quality and user experience also play key roles. Martin and Cooper (2021) emphasized that fast delivery, easy navigation, and responsive support are what keep customers satisfied with online pharmacies. On the other hand, Wilson and Gupta (2020) observed that traditional pharmacies score higher when it comes to empathy, assurance, and complex medication guidance areas where a human touch still matters.

Then, the COVID-19 pandemic was a turning point. Kumar and Sharma (2022) documented how lockdowns accelerated the shift toward digital pharmacies. People appreciated the contactless experience and started relying more on virtual consultations and repeat orders. This trend suggests a long-term shift in consumer expectations.

Several studies dive deeper into the psychological and behavioral factors that influence pharmacy choices. Sharma and Singh (2022) applied the Theory of Planned Behavior (TPB), revealing that social influence, perceived control, and time-saving benefits make online pharmacies more appealing, especially to working professionals. People who've had negative experiences at traditional pharmacies are more likely to shift to digital platforms.

The role of mobile apps is also shaping pharmacy usage. According to Thompson and Lee (2020), apps that offer prescription reminders, teleconsultations, and easy refills contribute significantly to medication adherence and loyalty. These tools enhance convenience and create a sense of personalized care, even without face-to-face interaction.

However, concerns about authenticity and counterfeit drugs remain high. Choudhury and Mishra (2022) found that many Indian consumers hesitate to trust online pharmacies due to past incidents and media reports. To overcome this, platforms must focus on transparency, verification seals, and responsive customer support.

Digital literacy and infrastructure gaps are particularly pressing in India. Prasad and Dixit (2020) highlighted how poor internet connectivity, lack of smartphones, and language barriers limit online pharmacy adoption in rural areas. Although the potential is high, the transition needs localized support such as regional language apps and community outreach.

On the regulatory side, Shah and Mehta (2020) discussed how the legal framework is struggling to keep pace with the growth of e-pharmacies. Without clear rules around prescription validation and drug safety, consumer trust can be fragile. Kapoor and Rajput (2020) called for amendments to existing laws and better oversight to make the digital pharmacy space safer and more reliable.

Lastly, Banerjee and Singh (2021) compared health outcomes between users of online and traditional pharmacies. While online users reported higher convenience and medication completion rates, traditional pharmacy users had better outcomes in managing chronic conditions thanks to pharmacist guidance and personal counseling. This balance points toward the future potential of hybrid models that combine the strengths of both.

Across the literature, one message is clear: consumers value both convenience and trust, but these priorities can shift based on age, location, and digital confidence. As online and traditional models evolve, understanding these preferences becomes essential for delivering better healthcare services.

Objective

This study aims to explore and evaluate consumer perceptions toward both online and traditional pharmacies, focusing on the following key objectives:

- To analyze consumer awareness and preference between online and traditional pharmacy models in India.

- To assess the impact of factors such as price, trust, convenience, and service quality on consumer decision making.

- To evaluate the influence of demographics like age, education, and digital familiarity on pharmacy choice.

- To identify the barriers and motivations behind consumer adoption of online pharmacies.

- To provide actionable insights for pharmacists, healthcare providers, and digital platforms to enhance service delivery and trust.
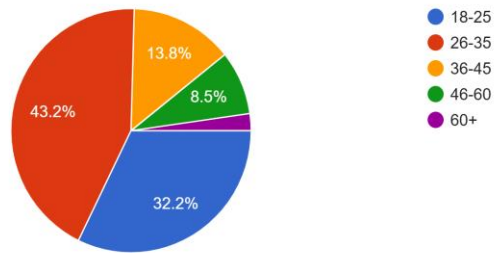
Summary of Data Collection:

1. **Age Group Distribution**

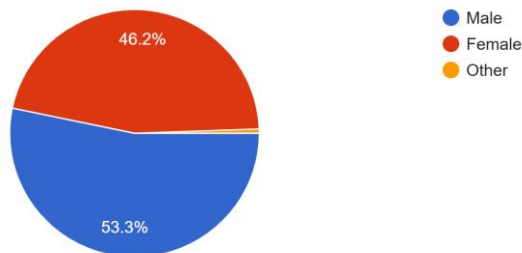## What is your age group?
354 responses

The majority of respondents are young adults, with 26–35-year-olds making up 39.3% and 18–25-year-olds 33.4%. This suggests that the survey results mainly represent the views of a younger demographic.

2. Gender Breakdown
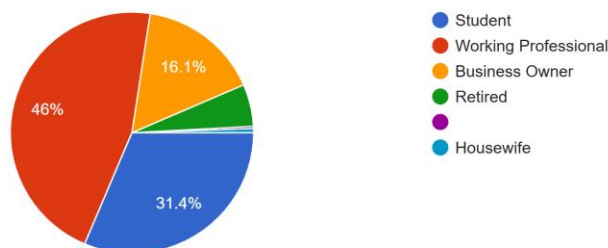
What is your gender?
353 responses

The survey received 353 responses, with 53.3% identifying as male and 46.2% as female. A very small portion of respondents identified as other. This indicates a relatively balanced gender distribution, with a slightly higher representation of males.

3. Profession of Respondents

What is your profession?
354 responses

Out of 354 responses, the majority (46%) identified as working professionals, followed by students at 31.4%. Business owners made up 16.1% of the respondents, while a smaller portion were retired or housewives. This indicates that the surveyed group is largely composed of individuals who are currently active in the workforce.

4. Medicine Purchase Frequency

How often do you purchase medicines?
354 responses

- Weekly
- Monthly
- Occasionally
- Rarely
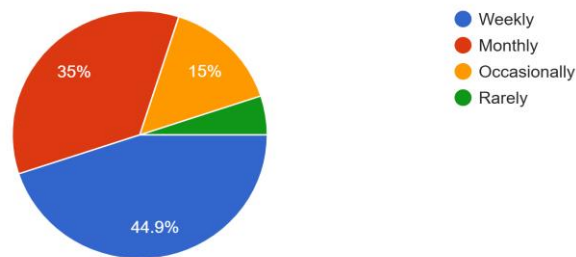
The majority of respondents (44.9%) in this survey purchase medicines rarely, while a significant portion (35%) purchase them monthly. Weekly purchases account for 15%, and occasional purchases are the least frequent (5.1%).

5. Primary Source For Medicine Purchase

Where do you primarily buy medicines from?
350 responses

- Traditional Pharmacy (Brick-and-Mortar)
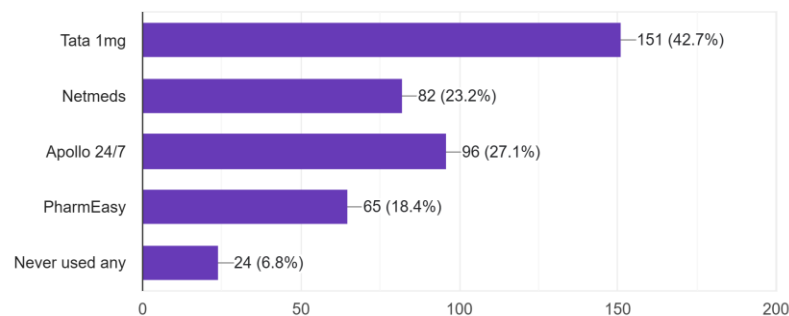- Online Pharmacy (e.g., 1mg, Netmeds, Apollo 24/7, PharmEasy)
- Both

Among 350 respondents, traditional brick-and-mortar pharmacies are the primary choice for medicine purchases (44%). Online pharmacies are also a significant primary source, favored by 32.3% of respondents. Notably, 23.7% of individuals primarily utilize both traditional and online options for their medicine needs.

6. Most Used Online Pharmacy

## Which online pharmacy have you used the most?
354 responses

Among the 354 respondents who have used online pharmacies, Tata 1mg is the most frequently used platform, with 42.7% of the responses. Apollo 24/7 is the second most used online pharmacy, accounting for 27.1% of the users. Netmeds and PharmEasy follow with 23.2% and 18.4% of usage respectively, while a small segment (6.8%) of respondents reported never having used any online pharmacy.

7. Primary Reason for Choosing Online Pharmacies

What is the main reason you choose an online pharmacy over a traditional pharmacy?
349 responses
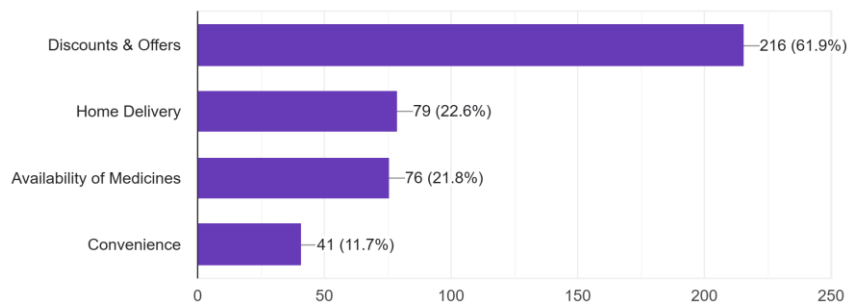
The survey with 349 responses indicates that the primary reason for choosing online pharmacies over traditional ones is the availability of discounts and offers, cited by a significant 61.9% of respondents. Home delivery is the second most important factor, influencing 22.6% of the choices. Availability of medicines and general convenience are also considered, with 21.8% and 11.7% of respondents selecting them as the main reasons, respectively.

8. Main Reasons for Preferring Traditional Pharmacies

What is the main reason you still prefer traditional pharmacies?
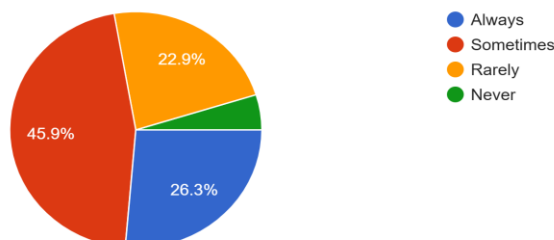354 responses
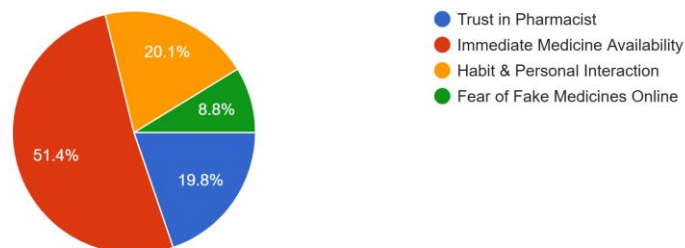
The primary reason individuals (51.4% of 354 respondents) still prefer traditional pharmacies is the immediate availability of medicines. Trust in the pharmacist is also a significant factor, cited by 20.1% of respondents. Concerns about fake medicines online (19.8%) and habit combined with personal interaction (8.8%) represent the remaining reasons for favoring traditional pharmacies.

9. Frequency of Online Pharmacy Use

How often do you use online pharmacies for your medicine needs?
353 responses

The survey of 353 respondents reveals that the most common frequency of using online pharmacies for medicine needs is 'Sometimes', accounting for 45.9% of the responses. A notable portion (26.3%) report using online pharmacies 'Always', indicating a consistent preference. Meanwhile, 22.9% use them 'Rarely', and a small segment (5.1% - calculated from the remaining percentage) indicate they 'Never' use online pharmacies.

10. Perceived Impact of Online Pharmacies on Local Pharmacy Sales

Do you think online pharmacies are affecting the sales of local pharmacies?
354 responses

- ● Yes, significantly
- ● Yes, slightly
- ● No impact

33.1%
7.6%
59.3%
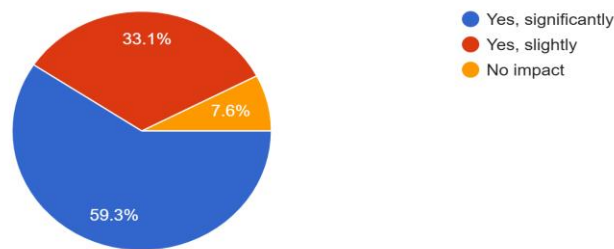
A majority of the 354 respondents (59.3%) believe that online pharmacies are significantly affecting the sales of local pharmacies. An additional 33.1% perceive a slight impact on local pharmacy sales due to online competition. Only a small fraction of respondents (7.6%) think that online pharmacies have no impact on the sales of local pharmacies.

11. **Opinion on Traditional Pharmacies Offering Online Services**

Should traditional pharmacies start offering online orders and home delivery to compete with online pharmacies?
351 responses

- ● Yes
- ● No
- ● Maybe

23.6%
12.8%
63.5%
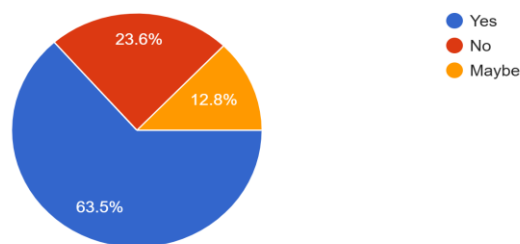
A significant majority (63.5%) of the 351 respondents believe that traditional pharmacies should start offering online orders and home delivery to compete with online pharmacies. Conversely, 23.6% of respondents do not think traditional pharmacies need to adopt these online services. A smaller portion (12.8%) are unsure or responded with 'Maybe' on whether traditional pharmacies should offer online options.

12. **Belief in the Survival of Traditional Pharmacies**

Do you believe that traditional pharmacies will survive against competition from online platforms like PharmEasy?
351 responses

- ● Yes, definitely
- ● Yes, but they need to adapt
- ● No, they will decline

25.4%
10.8%
63.8%
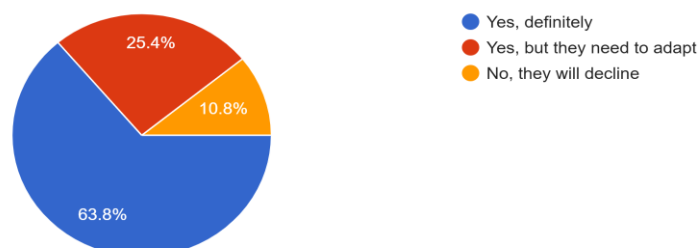
A strong majority (63.8%) of the 351 respondents believe that traditional pharmacies will definitely survive the competition from online platforms. Another 25.4% think traditional pharmacies will survive, but they need to adapt to the changing landscape. Only a small percentage (10.8%) anticipate that traditional pharmacies will decline due to competition from online platforms.

13. **Perceived Medicine Authenticity and Safety by Pharmacy Type**

Do you feel medicine authenticity and safety is better at traditional pharmacies than online pharmacies?
349 responses

- Yes
- No
- Both are the same

24.1%
17.8%
58.2%
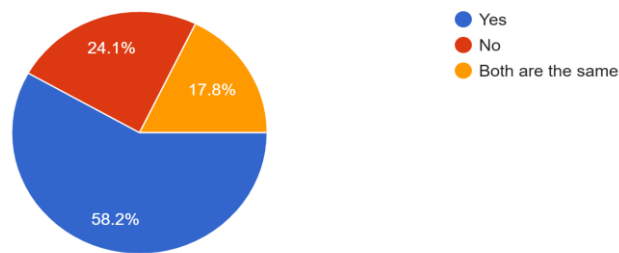
A significant majority (58.2%) of the 349 respondents believe that medicine authenticity and safety are better at traditional pharmacies compared to online pharmacies. Conversely, 24.1% of respondents do not feel there is a difference in authenticity and safety between the two types of pharmacies. A smaller group (17.8%) perceives the level of medicine authenticity and safety to be the same at both traditional and online pharmacies.

14. Prediction of Online Pharmacy Replacement of Traditional Pharmacies

In the next 5 years, do you think online pharmacies like Tata 1mg & Netmeds will completely replace traditional pharmacies?
347 responses

- Yes
- No
- Both will co-exist

21.6%
20.5%
57.9%
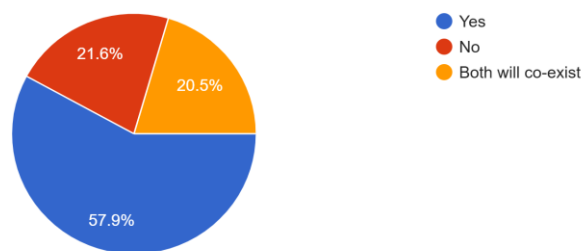
The majority of the 347 respondents (57.9%) believe that online pharmacies like Tata 1mg and Netmeds will not completely replace traditional pharmacies in the next 5 years. A notable portion (21.6%) do think that online pharmacies will eventually lead to the complete replacement of traditional pharmacies. Meanwhile, 20.5% of respondents anticipate that both online and traditional pharmacies will co-exist in the future.

RESULT AND FINDINGS

After analyzing the survey data and comparing it with the reviewed literature, several key findings emerged that help explain how consumers currently perceive and choose between online and traditional pharmacies.

Hypothesis 1: Consumer Behavior and Perception Towards Online vs. Traditional Pharmacies

Null Hypothesis (H_0): There is no significant difference in consumer behavior and perception between online and traditional pharmacies.

Alternative Hypothesis (H_1): There is a significant difference in consumer behavior and perception between online and traditional pharmacies.

Chi-Square Test Results:

Chi-Square Value: 418.34

p-value: 5.59×10^{-93}

Conclusion:

Since the p-value is far below 0.05, we reject the null hypothesis. This confirms that there is a statistically significant difference in consumer perception when comparing online and traditional pharmacies. The results suggest that consumers evaluate these two models differently, particularly in terms of service delivery, trust, and ease of access.

Hypothesis 2: Impact of Convenience and Digital Access on Preference

Null Hypothesis (H_0): Convenience and digital access do not significantly influence consumer preference for online pharmacies.

Alternative Hypothesis (H_1): Convenience and digital access significantly influence consumer preference for online pharmacies.

Chi-Square Test Results:

Chi-Square Value: 7.46

p-value: 0.280

Conclusion:

Since the p-value is greater than 0.05, we fail to reject the null hypothesis. This indicates that, based on this data, convenience and digital access alone do not have a statistically significant effect on consumer preference. Consumers consider a broader range of factors—such as trust, authenticity, and professional recommendation—before deciding.

Final Interpretation

- Consumers are increasingly open to both models. Online pharmacies are not replacing traditional ones, but instead are seen as an additional option especially useful for routine purchases and convenience.

- Trust and awareness still need improvement. While many respondents recognize the value of online pharmacies, a considerable portion remain uncertain about their effectiveness and safety.

- Price is important, but not enough on its own. Consumers weigh several factors when choosing where to buy medicine with reliability, availability, and healthcare provider input playing big roles.

Limitations of the study:

- Age distribution was skewed toward younger respondents (18–30), which may not fully represent older adults who often rely more heavily on healthcare services.

- Digital survey methods excluded individuals with limited internet access or low digital literacy, possibly leaving out valuable perspectives from rural or underrepresented areas.

- Sample size and regional focus may not fully capture India's diverse population, especially given the varied healthcare access across states and income levels.

- Awareness gaps among some respondents could have impacted the accuracy of their answers, particularly regarding online pharmacy services.

Conclusion:

- As the pharmacy sector evolves, Indian consumers are navigating between the convenience of online platforms and the familiarity of traditional stores. This study finds that while online pharmacies are gaining popularity especially among younger, tech-savvy users traditional pharmacies remain deeply valued for their face-to-face service and immediate availability of medications.

- Crucially, consumers do not strongly prefer one model over the other. Many view them as complementary rather than competitive. Price is a factor, but it doesn't dominate consumer decisions. Trust, availability, quality, and doctor recommendations weigh just as heavily if not more.

- Yet, gaps remain. A significant portion of people still feel unsure about the safety and authenticity of online pharmacies. Building consumer trust through verified services, transparent communication, and consistent service will be essential for long-term adoption.

- The research suggests that the future of pharmaceutical access in India likely lies in a blended approach combining the best of both worlds. Digital platforms must continue to innovate, while traditional pharmacies need to explore how to integrate technology to stay relevant. With the right strategies, this convergence can lead to better healthcare access, improved medication adherence, and a more informed and empowered public.

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