INFOMANIA: THE RESEARCH JOURNAL
Volume 2, Issue 2, March - April 2026
https://infomaniajournal.com **ISSN:3108-0006**

A Study of Factors Influencing Consumer Adoption Of E-Pharmacy Services in Navi Mumbai

Dr. Iftiqar Mistry
(Associate Professor, NCRD'S Sterling Institute of Management Studies, Nerul, Navi Mumbai)
Email Id: iftiqarmistry@ncrdsims.edu.in ,Contact No: 9867502905

Nikita Ghalme
(SYMMS Student, NCRD'S Sterling Institute of Management Studies, Nerul, Navi Mumbai)
Email Id: nbghalme12@gmail.com , Contact No: 9867757907

Abstract

Digital technology's explosive growth has completely changed several economic sectors, including pharmaceutical and healthcare. Online ordering and home delivery of medications and health supplies — commonly referred to as e-pharmacy — has emerged as a major advancement in healthcare accessibility. Navi Mumbai, a rapidly urbanizing satellite city of the Mumbai Metropolitan Region with an increasingly tech-savvy populace, this study explores the major determinants impacting consumer acceptance of e-pharmacy services.

This study examines aspects of awareness, usage behavior, perceived convenience, trust, pricing sensitivity, data security concerns, and future adoption intent using a structured questionnaire administered to 100 respondents from diverse demographic groups, including students, salaried professionals, homemakers, and retirees. A Google Form-based poll was used to gather primary data in March 2026.

Key findings reveal that 89% of respondents are aware of e-pharmacy platforms, but only 44% have made a purchase, indicating a sizable awareness-to-conversion gap. The most well-known platforms are PharmEasy (65%) and Apollo Pharmacy Online (55%). The most significant adoption drivers are referrals from friends and family (40%) and social media and television commercials (47%). The most cited obstacles are a preference for in-person pharmacist consultation (51%), difficulty uploading prescriptions (34%), and a lack of confidence in product validity (32%). Although 56% of respondents indicate they are likely to adopt or continue using e-pharmacy services in the future, 46% remain ambivalent, suggesting a moderate level of satisfaction. The report concludes with recommendations for enhancing user experience, trust, and legal frameworks to hasten the adoption of e-pharmacies in Navi Mumbai.

Keywords: *E-pharmacy, Online pharmacy, Consumer adoption, Digital health, Navi Mumbai, TAM model, Consumer behaviour, Healthcare e-commerce*

1. Introduction

1.1 Background of the Study

Digital technology is driving a revolutionary change in India's healthcare industry. The rise and rapid expansion of e-pharmacy platforms — online services that allow customers to obtain prescription medications, over-the-counter medications, health supplements, and personal care items from the comfort of their homes — is one of the most visible manifestations of this transformation. In Indian cities and towns, platforms such as PharmEasy, 1mg (Tata 1mg), Netmeds, Apollo Pharmacy Online, and MedPlus have collectively amassed hundreds of millions of registered users.

Increased smartphone penetration, improved internet access, the COVID-19 pandemic's acceleration of digital adoption, and expanding consumer health awareness have all contributed to India's e-pharmacy market achieving a compound annual growth rate (CAGR) of more than 20%. E-pharmacy has also gained prominence in the policy arena as a result of the Government of India's Draft Pharmacy Rules (2018) and the ensuing policy discussions surrounding the regulation of online pharmaceuticals.

A particularly pertinent backdrop for this study is Navi Mumbai — a planned urban agglomeration developed by the City and Industrial Development Corporation (CIDCO) across the Thane Creek from Mumbai. With a population of approximately 1.1 million, a high proportion of educated and working-class citizens, robust digital infrastructure, and proximity to one of India's largest pharmaceutical markets, Navi Mumbai represents a microcosm of India's evolving digital healthcare consumer.

1.2 Statement of the Problem

In semi-urban and planned urban areas like Navi Mumbai, customer acceptance is still uneven despite the presence of well-funded and widely publicised e-pharmacy platforms. The adoption pathway is hampered by traditional pharmacist-consumer interactions, legal ambiguities surrounding prescription verification, concerns about product authenticity, and barriers related to digital literacy. The academic literature currently lacks a methodical, data-driven understanding of the elements that aid or impede the adoption of e-pharmacies in this specific geographic and demographic context.

1.3 Objectives of the Study

1. To assess the level of awareness of e-pharmacy services among consumers in Navi Mumbai.
2. To identify the key factors that influence consumer adoption of e-pharmacy services.
3. To analyse the barriers and challenges that inhibit the use of e-pharmacy platforms.
4. To evaluate consumer satisfaction and future intent to use e-pharmacy services.
5. To provide actionable recommendations for e-pharmacy service providers and policymakers.

1.4 Scope of the Study

This study is limited to consumers residing in Navi Mumbai, Maharashtra. The sample comprises a cross-section of age groups, professions, income brackets, and educational backgrounds. The study does not examine the supply-side activities of e-pharmacy companies; instead, it concentrates on the attitudes and actions of individual consumers. Data was collected during March 2026.

1.5 Significance of the Study (Research Gap)

This study contributes to the expanding corpus of research on the uptake of digital health in urban Indian settings. Healthcare regulators drafting legal frameworks for online medications, e-pharmacy platform operators seeking to increase user acquisition and retention, and academic researchers examining consumer behaviour in digital commerce can all benefit from these findings. Additionally, the study establishes a baseline for future longitudinal studies on the evolution of e-pharmacy use in Navi Mumbai.

2. Literature Review

- **Chaudhary et al. (2021)** found that Indian consumers who had encountered online payment failures or data breaches were far less likely to engage with e-pharmacy services, highlighting data privacy and security as key deterrents given the evolving state of India's personal data protection framework.
- **Davis (1989)** originally proposed the Technology Acceptance Model (TAM), establishing that a person's intention to use a technological system is shaped by two constructs: Perceived Usefulness (PU) and Perceived Ease of Use (PEOU). In the context of e-pharmacies, PU encompasses convenience, time savings, cost advantages, and product availability, while PEOU relates to app interface intuitiveness, payment simplicity, and ease of uploading prescriptions.
- Extended TAM models incorporate trust, security perception, social influence, and facilitating conditions. Trust and security are particularly important moderating factors given the sensitive nature of pharmaceutical transactions involving prescription medications and private health information.
- **Fox (2010) and Clauson et al. (2010)** consistently found that cost savings, home delivery convenience, and privacy are the primary reasons U.S. consumers purchase pharmaceuticals online, while concerns about prescription fraud, counterfeit drugs, and lack of pharmacist counselling act as significant disincentives.

- **Gupta et al. (2020)** analysed COVID-19's effects on e-pharmacy usage in tier-I Indian cities and found that new users tripled during lockdown periods, though challenges with delivery reliability and trust kept repeat purchase rates low.
- **Kapoor and Vij (2018)** demonstrated that digital literacy and income have a moderating effect on technology adoption intention in India, indicating that socioeconomic factors significantly shape e-pharmacy uptake.
- **Kumar et al. (2020)** found that compliance with prescription procedures and confidence in product validity were the biggest barriers to e-pharmacy adoption in India, with consumer fear of receiving counterfeit, out-of-date, or substituted medications remaining a persistent obstacle.
- **Liang et al. (2007)** identified convenience and personalisation as the main drivers of mobile health service uptake in Taiwan, offering early evidence for TAM's applicability to health-technology platforms.
- **Mackey et al. (2020)** reported that the COVID-19 pandemic accelerated global e-pharmacy adoption, with online pharmaceutical transactions increasing dramatically between 2020 and 2021 across multiple countries.
- **Mehta and Joshi (2022)** found that the 18–30 age group was increasingly drawn to e-pharmacies, partly driven by discount-led transactions, noting that platform discounts on branded medications typically range from 10% to 25%, with larger discounts available on generic alternatives.
- **Orizio et al. (2011)** noted that consumers using internet pharmacies in the European context were particularly concerned about product authenticity and regulatory monitoring, highlighting trust as a central adoption barrier.
- **Rajan and Bhatia (2019)** investigated consumer attitudes toward buying medications online in urban India, finding that trust in product quality represented the greatest barrier while price comparisons and savings were the strongest motivators.
- **Saha and Bhattacharya (2019)** found that customers who prioritise time savings are significantly more likely to transition from offline to online pharmacies, underscoring convenience as a primary e-pharmacy motivator in dense urban areas.
- **Singh and Rana (2021)** found that consumers with higher digital competence are more likely to embrace and regularly use e-pharmacy platforms, suggesting that educational programs

centred on navigating digital health could significantly increase the consumer base through social influence.

3. Research Methodology

3.1 Research Design

A descriptive and analytical research design is employed in this study. A structured questionnaire served as the primary data collection instrument to acquire both quantitative and qualitative information from Navi Mumbai consumers. This is a cross-sectional study, with data gathered in a single wave during March 2026.

3.2 Data Collection Instrument

The structured Google Form questionnaire comprised six thematic sections: (1) demographic profile, (2) e-pharmacy awareness and platform recognition, (3) usage behaviour and frequency, (4) factors influencing adoption using a 5-point Likert scale, (5) usage barriers, and (6) future adoption intent and satisfaction. Before final deployment, the questionnaire was pre-tested with a pilot group of ten respondents, and minor modifications were made to enhance clarity and reduce ambiguity.

3.3 Sampling

Purposive convenience sampling was employed. The target population comprised individuals residing in Navi Mumbai aged 18 years or above. The final sample size of 100 respondents was considered appropriate for an exploratory descriptive study of this scope. The Google Form link was distributed digitally through academic networks, social media platforms, and WhatsApp groups.

3.4 Research Hypotheses

Hypothesis	Null (H_0)	Alternate (H_1)
H1: Price Discounts	No significant relationship between price discounts and e-pharmacy adoption	Significant relationship between price discounts and adoption
H2: Convenience	Convenience does not significantly influence adoption	Convenience significantly influences adoption
H3: Trust & Data Security	Trust and data security have no significant impact on adoption	Trust and data security significantly impact adoption
H4: Medicine Availability	Availability of medicines does not affect adoption	Availability of medicines affects adoption

3.5 Data Analysis

After being exported from Google Forms as CSV, the collected data were analysed using descriptive statistical techniques, including frequency distributions, percentage analyses, and cross-tabulations. Likert scale responses were coded and analysed to identify central tendencies in consumer perceptions.

Qualitative responses from open-ended questions were categorised thematically. All analysis was performed using Microsoft Excel.

3.6 Ethical Considerations

The survey was completely voluntary and anonymous. No personally identifiable health information was gathered. Participants were informed of the study's purpose and their right to withdraw at any point. The study adheres to accepted social science research ethics.

4. Demographic Profile of Respondents

Table 4.1 summarises the socio-demographic characteristics of the 100 survey respondents. The sample reflects a young, educated, and predominantly employed urban population, broadly representative of Navi Mumbai's demographic profile.

Table 4.1: Demographic Profile of Respondents (N=100)

Demographic Variable	Category	Frequency (n)	Percentage (%)
Age Group	18–25 years	59	59%
	26–35 years	19	19%
	36–50 years	15	15%
	50 years and above	7	7%
Occupation	Student	48	48%
	Salaried (Private)	41	41%
	Retired	6	6%
	Homemaker	3	3%
	Salaried (Government)	2	2%
Monthly Income	Above ₹1,00,000	30	30%
	₹50,000 – ₹1,00,000	26	26%
	Below ₹25,000	25	25%
	₹25,000 – ₹50,000	19	19%
Education	Post Graduate	42	42%
	Graduate	40	40%
	SSC / HSC / Diploma	18	18%

The age distribution shows a significant skew toward younger respondents, with 59% falling in the 18–25 age range — a cohort that has grown up with smartphones and is highly comfortable with online transactions. Early working professionals are represented by the 26–35 cohort (19%). Students (48%) and private sector employees (41%) collectively account for 89% of the sample. Income distribution is relatively balanced, with 30% earning above ₹1,00,000 per month, reflecting Navi Mumbai's affluent professional base. Educational attainment is high, with 82% of respondents holding graduate or post-graduate degrees, which correlates positively with e-commerce engagement and digital literacy.

5. Findings and Analysis

5.1 Awareness of E-Pharmacy Services

Awareness of the technology is a foundational prerequisite for its adoption. The survey reveals a high baseline level of awareness among Navi Mumbai consumers.

Table 5.1: Awareness of E-Pharmacy Services

Level of Awareness	Number of Respondents	Percentage (%)
Yes, fully aware	89	89%
Not aware at all	11	11%

The substantial 89% awareness rate demonstrates the success of mass media advertising and word-of-mouth marketing by platforms like PharmEasy and Apollo Pharmacy Online. The remaining 11% may be older, less tech-savvy, or from lower-income backgrounds. Crucially, this high awareness rate indicates that converting awareness into actual purchasing behaviour — rather than creating awareness — is the primary challenge facing e-pharmacy platforms in Navi Mumbai.

5.2 Platform Recognition

Table 5.2: E-Pharmacy Platform Recognition (Multiple Responses, N=100)

E-Pharmacy Platform	Respondents Who Recognise	Recognition Rate (%)
PharmEasy	65	65%
Apollo Pharmacy Online	55	55%
MedPlus	33	33%
Netmeds	30	30%
1mg (Tata 1mg)	27	27%
Other platforms	9	9%

PharmEasy leads platform recognition at 65%, followed by Apollo Pharmacy Online at 55%. Apollo's well-established physical pharmacy chain presence likely bolsters its online recognition. MedPlus (33%) and Netmeds (30%) occupy the middle tier, while 1mg (Tata 1mg) scores lower at 27% in this sample, possibly reflecting its stronger awareness in northern Indian markets. These results suggest that PharmEasy and Apollo's marketing investments have been particularly effective in the Navi Mumbai market.

5.3 Purchase Behaviour and Usage Frequency

Table 5.3: Purchase History on E-Pharmacy Platforms

Purchase Status	Frequency (n)	Percentage (%)
Yes, have purchased	44	44%
No, have not purchased	38	38%
Browsed but did not purchased	18	18%

Despite 89% awareness, only 44% of respondents had actually made a purchase, representing a conversion rate of roughly 49%. An additional 18% browsed platforms without purchasing, forming a partially converted group that has demonstrated intent but has not completed a transaction. In total, 62% of respondents had interacted with e-pharmacy platforms in some way. The 38% who have never engaged with these platforms represent a significant untapped opportunity.

Table 5.4: Frequency of E-Pharmacy Usage (Among Users, n=65)

Usage Frequency	Frequency (n)	Percentage (%)
Rarely (once or twice a year)	39	60%
Once in 2–3 months	14	22%
Once a month or more	6	9%
Only once so far	6	9%

Usage frequency among existing customers is predominantly infrequent: 60% use e-pharmacy services only once or twice a year, while a mere 9% use them monthly or more. This pattern suggests that e-pharmacy is an occasional rather than habitual behaviour for most current consumers, often triggered by specific circumstances such as the need for contactless delivery, unique discounts, or difficulty sourcing a medication locally. Converting infrequent users into regular customers remains one of the industry's primary strategic challenges.

5.4 Factors Influencing Adoption Decision

Table 5.5: Factors Influencing E-Pharmacy Adoption (Multiple Responses, N=100)

Influencing Factor	No. of Respondents	Percentage (%)
Social Media / TV Advertisements	47	47%
Recommendation by Friend / Family	40	40%
Home Delivery Convenience	38	38%
Discount / Price Offer	33	33%
Unavailability at Local Pharmacy	32	32%
Doctor's Suggestion	19	19%

Social media and TV commercials (47%) represent the most significant adoption driver, demonstrating the effectiveness of major marketing investments by e-pharmacy platforms. Word-of-mouth referrals from friends and family (40%) underscore the continuing importance of personal trust networks in healthcare decisions. Home delivery convenience ranks third (38%), confirming the core value

proposition of online pharmacies. Discounts and price offers influence 33% of respondents, while medication unavailability at local pharmacies acts as a supply-side push factor for 32%. Notably, doctors' recommendations exert influence on only 19% of respondents, suggesting a significant untapped channel.

5.5 Likert Scale Analysis: Consumer Perceptions

Respondents rated nine perception statements on a 5-point Likert scale (Strongly Disagree to Strongly Agree). The key findings are summarised below.

Table 5.6: Summary of Likert Scale Perception Responses

Perception Dimension	Agree/Strongly Agree (%)	Neutral (%)	Disagree/Strongly Disagree (%)
Convenience & time savings	56%	24%	20%
Price advantage & wider range	63%	27%	10%
Ease of app navigation	49%	29%	22%
Simplicity of prescription upload & payment	43%	31%	26%
Trust in product authenticity	33%	49%	18%
Data privacy & security	31%	54%	15%
Fear of wrong/expired medicines (barrier)	61%	31%	8%
Home delivery & 24/7 availability	59%	34%	7%
Discounts & cashback as motivation	54%	38%	8%

The Likert scale data reveal several important patterns. Price advantage (63% agreement) and home delivery convenience (59% agreement) are the most clearly positive perceptions. Trust in product authenticity (only 33% agreement, 49% neutral) and data privacy (31% agreement, 54% neutral) are the most problematic dimensions, with high neutral rates likely reflecting scepticism rather than genuine indifference. The most alarming finding is that 61% of respondents agree that fear of receiving wrong or expired medicines inhibits their e-pharmacy usage, identifying this as the single largest psychological barrier to adoption.

5.6 Products Ordered Online

Table 5.7: Type of Products Ordered Online (Multiple Responses)

Product Category	No. of Respondents	Percentage (%)
Personal care products	39	39%
Never ordered	38	38%
Prescription medicines	26	26%
Health supplements	25	25%
OTC (Over-the-Counter) medicines	22	22%

Personal care products lead online purchases at 39%, while 38% of respondents have never placed an order. Prescription medicines (26%), health supplements (25%), and OTC medications (22%) follow. The predominance of personal care and wellness products over prescription medications reflects the lower perceived risk associated with non-pharmaceutical categories. Regulatory requirements for prescription uploads likely deter purchases in the prescription category. Health supplements represent a burgeoning segment driven by heightened post-pandemic health consciousness.

5.7 Barriers to E-Pharmacy Usage

Table 5.8: Barriers to E-Pharmacy Usage (Multiple Responses, N=100)

Barrier	No. of Respondents	Percentage (%)
Prefer consulting a pharmacist in person	51	51%
Difficulty in uploading the prescription	34	34%
Lack of trust in product authenticity	32	32%
Delayed delivery	26	26%
Concern about data privacy	26	26%
Not comfortable with online payment	17	17%
Not aware of e-pharmacy services	8	8%
Other reasons	17	17%

The preference for in-person pharmacist consultation (51%) is the most pervasive barrier, reflecting deeply rooted healthcare habits and the perceived importance of pharmacist guidance, particularly for patients with chronic conditions, elderly users, and complex drug regimens. Prescription upload difficulty (34%) represents a key process friction that platforms must address through improved UI design, enhanced OCR technology, and streamlined prescription verification workflows. Trust in product authenticity (32%), delayed delivery (26%), and data privacy concerns (26%) round out the top barriers. Notably, payment discomfort (17%) is relatively low, indicating a reasonably mature level of digital payment acceptance in the sample.

5.8 Satisfaction and Future Adoption Intent

Table 5.9: Overall Satisfaction and Future Adoption Intent

Measure	Category	Frequency (n)	Percentage (%)
Overall Satisfaction	Very Satisfied	4	4%
	Satisfied	34	34%
	Neutral	46	46%
	Dissatisfied	16	16%
Future Intent	Very Likely	11	11%
	Likely	48	48%
	Neutral	21	21%
	Unlikely	20	20%

Overall satisfaction is modest: 38% express positive satisfaction, 46% are neutral, and 16% are dissatisfied. Future adoption intent is more encouraging, with 59% indicating a likelihood or high likelihood of future e-pharmacy use. This suggests a reservoir of latent demand that has yet to fully materialise, likely constrained by the barriers identified above. A notable 68% of all respondents indicated willingness to recommend e-pharmacy services to others, demonstrating a positive net promoter sentiment that could be leveraged to drive organic growth.

6. Discussion

6.1 The Awareness-to-Adoption Gap

The study's most striking finding is the substantial discrepancy between awareness (89%) and actual purchasing behaviour (44%). This 45-percentage-point gap — commonly referred to as the "awareness-to-conversion gap" in marketing literature — indicates that e-pharmacy platforms have succeeded in building brand recognition but have not yet translated awareness into consistent purchasing behaviour. This pattern is consistent with theoretical models of adoption that distinguish between awareness, attitude formation, behavioural intention, and actual usage as successive but not automatic steps.

The 18% of respondents who have browsed but not purchased represent a particularly valuable demographic. They are aware, interested, and sufficiently motivated to explore platforms, but have been deterred at the point of transaction. Targeted interventions for this "consideration" cohort — such as simplified onboarding, first-purchase incentives, or virtual pharmacist assistance — could yield significant improvements in conversion rates.

6.2 Trust as the Central Challenge

Across multiple study variables — product authenticity, data privacy, and fear of receiving incorrect medications — trust emerges as the central obstacle to e-pharmacy adoption in Navi Mumbai. The findings that 61% of respondents worry about receiving wrong or expired medications, and that only 33% trust the authenticity of online medicines, are especially concerning for an industry whose core product is directly linked to human health and safety.

Resolving this trust deficit requires more than effective marketing communication. Structural changes are necessary: robust third-party quality certification, transparent supply chain disclosure, real-time order tracking with pharmacist verification, and proactive regulatory enforcement. The Government of India's ongoing policy discussions surrounding e-pharmacy regulation must culminate in consumer-visible quality assurances.

6.3 The Prescription Upload Friction

Among all operational aspects, the prescription upload process generates the most divided responses and is identified as the second most frequent usage barrier (34%). This friction stems from both technological limitations and regulatory requirements for prescription-based medications.

Advancements in mobile camera integration, optical character recognition (OCR) for prescription reading, and streamlined pharmacist review processes can substantially reduce this friction without compromising regulatory compliance.

6.4 Social Influence and the Role of Recommendations

The prominence of peer referrals (40%) and social media advertising (47%) as adoption factors validates the utility of social influence constructs in understanding e-pharmacy adoption behaviour. Platforms may achieve greater returns from peer-driven marketing — referral programs, influencer partnerships, user reviews, and endorsements from healthcare professionals — than from traditional advertising alone. The comparatively low influence of doctors' recommendations (19%) signals an unexploited channel that could significantly accelerate adoption if healthcare providers became more active advocates.

6.5 The Traditional Pharmacist Preference

The dominance of in-person pharmacist consultation preference (51%) as the top barrier reveals a fundamentally relational dimension of pharmaceutical consumption that digital channels have not yet adequately addressed. Customers value the ability to ask questions, receive prompt responses, and obtain personalised guidance from a trusted healthcare professional. E-pharmacy platforms that can replicate or enhance this experience — through integrated telepharmacy services, live chat with licensed pharmacists, or AI-driven drug counselling — stand a far greater chance of converting this hesitant segment.

7. Recommendations

7.1 For E-Pharmacy Platform Operators

1. Invest in Trust Infrastructure: Display FSSAI certificates, medicine license numbers, and cold-chain verification badges prominently on every product page. Explore blockchain-based supply chain tracking for high-value medications to provide end-to-end provenance transparency.
2. Simplify the Prescription Experience: Redesign the prescription upload process with smart camera guidance, auto-cropping, and real-time pharmacist callback options. Explore partnerships with digital health platforms and hospitals for seamless e-prescription integration.
3. Introduce Telepharmacy Services: Deploy licensed pharmacists available for live video or chat consultations to address the dominant barrier of in-person consultation preference, particularly for patients with chronic conditions and complex medication regimens.
4. Strengthen Data Privacy Communication: Obtain independent data security certifications, seek explicit user consent for health data utilisation, and communicate data protection policies clearly and accessibly. Emphasise compliance with India's evolving data protection legislation.
5. Target the 'Browsed but Not Purchased' Segment: Deploy personalised nudges for users who have visited platforms without transacting, including guided onboarding flows, first-purchase discounts, and abandoned-cart reminders.

6. Engage Healthcare Providers: Establish referral programs enabling physicians and hospital networks to recommend e-pharmacy services directly, with particular focus on patients requiring regular prescription renewals for chronic conditions.

7.2 For Policymakers and Regulatory Authorities

1. Accelerate and Complete E-Pharmacy Regulations: India's prolonged regulatory ambiguity around online pharmacies creates consumer confusion and operational risk for platforms. A clearly defined and enforced regulatory structure will materially increase consumer trust and industry accountability.
2. Mandate Quality Labelling: Require e-pharmacy platforms to display batch authenticity markers and expiry date verification on individual product pages — not only in warehouse documentation — to provide consumers with visible assurances at the point of purchase.
3. Promote Digital Health Literacy: Integrate e-pharmacy information and safe usage guidance into public health communication campaigns, with particular focus on older populations and lower-income groups who currently demonstrate lower awareness and adoption rates.

8. Limitations and Future Research Directions

8.1 Limitations of the Study

1. Sample Composition Bias: The strong bias toward respondents aged 18–25 may not accurately reflect the broader Navi Mumbai consumer base, particularly middle-aged and older consumers who represent a significant share of the pharmaceutical market.
2. Self-Selection Bias: Online surveys distributed via social media and academic networks may overrepresent digitally active individuals, who are inherently more likely to use or consider e-pharmacy services.
3. Cross-Sectional Design: Data captured at a single point in time cannot account for changes in attitudes and market conditions over time.
4. Geographic Limitation: Findings are specific to Navi Mumbai and may not be directly applicable to other Indian cities, particularly tier-II and tier-III urban centres.

8.2 Future Research Directions

1. Conduct longitudinal research in Navi Mumbai over a two-to-three-year horizon to track attitudinal and behavioural changes in e-pharmacy adoption.
2. Apply Structural Equation Modelling (SEM) to test the relative importance of TAM constructs — Perceived Usefulness, Perceived Ease of Use, Trust, and Social Influence — in predicting e-pharmacy adoption intention.
3. Expand the study to tier-II Maharashtra cities, including Pune, Nashik, and Aurangabad, to enable regional comparative analysis.

4. Examine how chronic illness management influences e-pharmacy adoption, with specific focus on the needs and concerns of patients requiring long-term medication regimens.

9. Conclusion

This study has provided a thorough empirical analysis of the factors influencing consumer adoption of e-pharmacy services in Navi Mumbai. The findings paint a picture of a market characterised by high awareness but moderate conversion, strong recognition of price and convenience benefits, and persistent trust gaps and process frictions that dampen actual usage.

The e-pharmacy industry in Navi Mumbai — and by extension, in India's planned metropolitan centres — is at an inflection point. The demographic conditions are favourable: the population is young, educated, tech-savvy, and increasingly health-conscious, with high smartphone penetration rates. The technological infrastructure is maturing. Market participants are well-funded and rapidly scaling. Yet these favourable conditions have not yet translated into mass-market adoption, constrained by confidence gaps in product quality and data security, and by the enduring importance consumers place on in-person pharmacist relationships.

Bridging these gaps requires a coordinated, multi-stakeholder approach: platform operators must invest in trust-building infrastructure and consultation capabilities; regulators must establish a clear and enforceable framework for online pharmaceutical quality; and healthcare providers must be actively engaged as advocates for digital pharmacy services. When these conditions are met, e-pharmacy holds the potential to genuinely democratise access to medications in urban India, making healthcare more accessible, convenient, and economical than ever before.

The 68% of respondents who indicated willingness to recommend e-pharmacy services to others, and the 59% who expressed intent to use these services in the future, point to a receptive market that is ready and waiting for the industry to earn its full confidence.

References

1. A. Gupta (2019). The influence of brand reputation on healthcare purchase decisions in the digital age. Journal of Marketing in India, 49(7), 22–35.
2. Bhatia, R., Sharma, P., and Chaudhary, R. (2021). Data privacy and consumer trust in digital health platforms: Indian data. Journal of Health Informatics in Developing Countries, 15(2), 44–58.
3. Bhatia, V., and Rajan, S. (2019). An empirical research of Indian metropolitan consumers' attitudes regarding online pharmacy services. Pharmaceutical and Healthcare Marketing International Journal, 13(2), 219–238.
4. Clauson, K. A., Marsh, W. A., Polen, H. H., Seamon, M. J., & Ortiz, B. I. (2010). Online medication information databases are analysed as clinical decision support tools. Medical Informatics and Decision Making, BMC, 7(7).

5. Deshmukh, A., and Patil, S. (2022). Maharashtra's urban consumers' preferences for online pharmaceutical services. 13(1),
6. F. D. Davis (1989). Information technology acceptability, perceived utility, and perceived usability. 319–340 in MIS Quarterly, 13(3).
7. Gelatti, U., Schulz, P. J., Orizio, G., and Merla, A. (2011). A thorough study of the quality of prescription medicine websites and online pharmacies. Medical Internet Research Journal, 13(3), e74.
8. Gupta, S., Kumar, N., and Prabhat, R. (2020). COVID-19 and the emergence of digital health: Urban India's acceptance of e-pharmacies. Health Management Journal, 22(3), 411–425.
9. Iyer, R., Krishnaswamy, M., & Nair, S. (2021). Customer happiness in online pharmacies is determined by service quality and delivery speed. Pharmaceutical and Healthcare Marketing International Journal, 15(1), 78–93.
10. Joshi, R., and Mehta, K. (2022). Young Indian urban customers' use of e-pharmacies and digital convenience. 47(2), 111–125, Vikalpa: The Journal for Decision Makers.
11. Kumar, V., Chatterjee, D., and Bhatia, S. (2020). The use of e-pharmacies in India is hampered by prescription legitimacy and trust. Consumer Behavior Journal, 19(4), 355–369.
12. Mackey, T. K., Lanckriet, G., Katsuki, T., and Kalyanam, J. (2020). During the COVID-19 pandemic, unlawful online prescription opioid sales were detected via Twitter. 516–521 in the American Journal of Drug and Alcohol Abuse, 46(5).
13. Saha, T., & Bhattacharya, P. (2019). Indian Journal of Commerce and Management Studies. Research of Indian urban customers found that price sensitivity and convenience are the main factors influencing the uptake of online pharmacies. 31(5), 1245–1260; Asia Pacific Journal of Marketing and Logistics.
14. Singh, R., & Rana, A. (2021). Adoption of e-health services and digital literacy in urban India. Informatics and Telematics, 58, 101535.
15. Verma, G., and Sharma, N. (2020). Opportunities, difficulties, and regulatory viewpoints on the expansion of online pharmacy in India. Technology and Health Policy, 9(4), 467–475.
16. Vij, M., and Kapoor, G. (2018). Technology at the dinner table: Using mobile food delivery apps in India to place online food orders. Retailing and Consumer Services Journal, 43, 342–351.
17. Yeh, Y. H., Liang, T. P., Huang, C. W., and Lin, B. (2007). A fit-viability paradigm for mobile technology adoption in business. 107(8), 1154–1169; Industrial Management and Data Systems.