

Factors Determining the Customers' Intention to Purchase OTC Products through E-Pharmacies

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Abstract

In the health care system, over-the-counter (non-prescribed) drugs play a crucial role in the medication process. Over-the-counter (OTC) drugs are medicinal products sold without a doctor's prescription. Without seeking care from health professionals, OTC medications are safe and effective for the general public usage. Generally, OTCs and self-medicines are used to treat mild health issues in a simpler and inexpensive way. Cold-and-cough medicines, vitamins, analgesics, digestive medicine (i.e., anti-acids), and dermatological medicines are the categories that dominate the world's top five OTC market-share. Limited studies in India aimed at evaluating OTC purchasing behaviour in e-pharmacies. Therefore, this study aimed to identify influential E-pharmacy factors that are affecting consumers during OTC products purchase. This study also examined the consumers' intention to purchase OTC products across major cities of Tamil Nadu. A total of 153 responses were collected from e-pharmacy customers through self-administered questionnaires across 4 major cities of Tamil Nadu. E-pharmacy customers who made at least one purchase on the e-pharmacy website were considered for the study. Based on the results, analgesic drugs are the most preferred OTC category in the online purchase mode. The results also demonstrated that post-purchase behaviour aspects like on-time delivery of the product and providing the shift response to solve the queries raised by the e-pharmacy customers play a significant role in enhancing customer satisfaction across e-pharmacy sites.

Keywords

OTC products, E-pharmacy, Customer, Generic drugs, Purchase Intention

Introduction

The pharmaceutical industry can be categorized into RX drugs (with prescription) and OTC products (without a prescription). Guido et al. (2011) add that these are "these medicinal products which are considered safe enough to be self-administered by patients when utilized for a period within the expiration date of the patent. The World Health Organization estimates that India accounts for 21% of the world's global burden of disease, and due to these health issues, India is losing more than 6% of its GDP annually. In 2019, India's medicine market OTC amounted to \$6.38 billion, with an expected growth rate of 19.4%. The market is capable of reaching \$15.48 billion by 2024. India is one of the most enticing markets as the 11th world's

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largest OTC drug market (Marketdata forecast). OTC medications are available for purchase in various places, including convenience stores, food stores, pharmacies, bargain stores, etc., without prescription.

The 70 percent of Indian pharmaceutical market share in terms of revenue is majorly dominated by branded generic drugs. Similarly, the other patented drug contributes 21 percent of the market share, whereas the counter (OTC) drug market contributes 9 percent of the total USD 20 billion revenue of the Indian pharmaceutical market (Umesh Chandra, 2016). According to Ventola (2013), Over-the-counter (OTC) can be directly marketed to consumers without a prescription, in contrast to prescription drugs distributed only to consumers having a valid prescription that is required from a healthcare practitioner. Practices of self-medication are not entirely harmful. The medications known as 'over the counter' can be bought without a prescription and save patients time and money. Patients use these medicines to overcome mild symptoms like headache, fever, and cold (Chaturvedi, 2009). The rising use of mobile devices contributes to increased access by various mobile health information systems in healthcare environments. The perceived utility has a significant impact on the intention of behaviour to utilize these systems (Ahmed et al., 2014). Health IT has a huge potential for effectiveness, quality, safety, cost reduction, although some barriers exist in underdeveloped nations. Several factors influence the E-pharmacy user acceptance in emerging countries (Park et al., 2013). Today, many enterprises use social media to boost brand consciousness through the creation and engagement of pages on social media platforms. Such widespread use of social media has primarily affected consumer behavioural shifts (Toney et al., 2015). In the past years, over 250 online pharmacies there have emerged in India. Frost and Sullivan estimate an exponential CAGR of 63 percent in India to expand from the current CAGR market of \$512 million and reach \$3.6 billion in 2022.

Over-the-counter Products

OTC medications favour patients by reducing their visits to physicians, reduced work time, and comparatively lesser spending compared to medicinal products available on prescription (Greene & Hertzberg, 2010). The growth of OTCs and self-medicines is an inexpensive and straightforward means of dealing with mild health issues. Cold-and-cough medicines, vitamins, analgesics, digestive medicine (i.e., anti-acids), and dermatological medicines dominate the world's five OTC medicines. The drivers for the purchase of OTC drugs were previously found to be prescriptions for similar symptoms or pharmacists' opinions about the disease (Anurasinghe et al., 2017). Comprehensive, sufficient prescription and OTC drug distribution systems need a more significant emphasis on the health needs of patients rather than product marketing (Bennadi, 2013). Srivastava RK et al. (2017) conducted a study in which he observed that younger people tend to buy OTC drugs more than elder ones. Also, the set of products is different for the younger group of people. Products like baby care and children nutrition target younger people, whereas the set of products for geriatrics is entirely different. OTC medications are widely viewed by medical professionals as both safe and effective when used appropriately. OTC medicines also give consumer benefits by reducing the expense of visits to physicians, reducing working time, and relatively lower than prescription medicines. (Marathe et al., 2020) The expenses for physician consultancy, as well as transportation costs, are also the major problems faced by the majority of the population. To come out from above these problems' majority of the people now a day's practice self-medication with OTC medicines for treating minor ailments (Bennadi, 2013). Increased reliance on OTC products to deal with common conditions, increase awareness, and wider penetration of OTC products in

rural regions is leading to a quick growth in India. It is very crucial to create a trust and comfort relationship with customers in this category to ensure loyalty and produce replacements. (Supriya, 2013).

E-pharmacies

As e-commerce develops, the number of transactions and the exchange of information between different people and companies is increasing. Ecommerce has offered pharmaceutical companies a more efficient method of operating and has also helped them to acquire a competitive market edge (Kanungo, 2004). Online pharmacies are companies that sell and deliver medicines via the Internet and by mail, including prescription-only drugs (Makinen et al., 2005). In the late 1990s, the first online pharmacy began in the U.S., where both prescription and non-prescription drug products were sold (Orizio et al., 2011). Medicines are not like other products that may be bought from any place because of their safety and their efficacy (Priyanka et al., 2016). E-pharmacy models can be roughly divided into types in India depending on the nature of inventories and distribution patterns (Mackey et al., 2016). Online pharmacies can be classified into three types: mail-order pharmacy shops and traditional pharmacies. In such cases, the medication is delivered directly to patients after the prescription is received. In the second type, patients are delivered with the drugs without a doctor's physical examination. Interaction between the patient, the doctor, or the medical practitioner is not face to face. Patients only need to fill in an online diagnostic form which the doctor will review for the production of prescriptions. The third model incorporates the prescription-free dispensing of medicines. Medlife, 1Mg, Netmeds Myra, CareOnGo, and Pharneasy are some of the key e-Pharmacy players in India. As e-pharmacy matures, smaller players are merging into larger players. PharmEasy and Medlife together hold 60-70% market share in India. The digitization element has also given the pharmaceutical business a new sense of competition. Every pharmacy tries to build a different system and to bring new aspects into the market to gain the customers' confidence. Pharmaceutical firms have different business methods; some of them strive towards increasing their range and becoming national brands, and others want to involve more local people. Marketing managers should develop the strategies and tactics needed to acquire extensive product value knowledge from a management perspective for customers in all modes (Krishnadas, 2021).

Materials and Methods

Conceptual Model

The idea of customers purchasing OTC products through E-pharmacies affects demographic characteristics such as age, income, education, gender, jobs, social status, and standard of living. The study, therefore, evaluated the awareness, attitude, action, and conduct throughout the purchase and characterization of OTC products in E-Pharmacies. The study was conducted to evaluate the consumer's awareness, attitudes, and behaviours and to identify crucial elements affecting the intention to purchase OTC drugs through E-pharmacies in Tamil Nadu. Limited studies in India aimed at evaluating OTC purchasing behaviour in e-pharmacies.

Methodology

The questionnaires were administered from Jan 2021 to May 2021 in the four main towns of Tamil Nadu, India. A sample size of 200 and the willingness of the individual to engage in the study process were picked. The study was done in four cities of Tamil Nadu by stratified random sampling. Data were gathered by providing the respondents with questionnaires. This study was carried out in four Tamil Nadu cities, namely Chennai, Coimbatore, Madurai, and Trichy. Based upon the literature analysis, the researchers constructed the questionnaire, and specialists tested the validity of the material. Each town was auto-administered with fifty surveys. Out of 200 surveys, 163 questionnaires were retrieved, with a response rate of 81.5.

After editing and curating data, 157 questionnaires, 153 of which were finally analyzed, were judged to be valid. The acceptance and practicality of the intervention were assessed by descriptive analysis of the items mentioned in the evaluation part of the study. The statistical level was selected for five percent, and IBM SPSS 19 was the statistical package used.

Objectives

- i) To explore the factors that predict intention to use OTC Products through e-pharmacies.
- ii) To study sociodemographic characteristics of drug consumers such as age, gender, marital status, education, income level affecting OTC products buying intention through e-pharmacies.

Data Analysis

Demographic and socio-economic profile of Consumers

Table 1. Demographic and socio-economic profile of consumers

	Demographics	Frequency	Percentage (%)
Gender			
1.	Male	83	54
2.	Female	70	46
No of Members in Family			
1.	Two members	19	12
2.	Three members	42	28
3.	Four members	60	39
4.	Five members	22	14
5.	More than Five members	10	7
Annual income of customers			
1.	<Rs 1 lakh	23	15
2.	One lakh to Two lakhs	43	28
3.	Two lakhs to Four lakhs	37	24
4.	>Four Lakhs	50	33
Education level of customers			
1.	High school or below	75	49
2.	Graduate	78	51
Age of customers			

1.	18–25 years	18	12
2.	26–35 years	26	17
3.	35–45 years	40	26
4.	45–55 years	53	35
5.	>55 years	16	10
Money spent on purchasing OTC products in E-pharmacies in a Year in RS			
1.	Less Than 1000	13	9
2.	1000 - 3000	40	26
3.	3001 - 5000	53	35
4.	5001 - 10000	30	19
5.	Above 10000	17	11
Frequency of purchase in a year			
1.	less than 3	25	16
2.	3-6	40	26
3.	6-9	48	32
4.	More Than 9	40	26
Preferred Payment Mode			
1.	Cash on Delivery	35	23
2.	Credit/Debit Cards	65	42
3.	Internet Banking	40	26
4.	Others	13	9
E- Pharmacy Site Preferred			
1.	Netmeds	20	13
2.	Pharomeasy	25	16
3.	1 mg	13	9
4.	Medlife	60	39
5.	Others	35	23

- From the above table, it is clear that 54% of the consumers were male, and 46% are female were purchasing OTC Products through E-pharmacies
- The number of family members: 39% of OTC consumers have 4 members in the family, 28% have three family members, and 14 percent have 5 family members. 12% of consumers have 2 family members, and 7% of them have more than 5 family members.
- The annual income of the OTC customers in E-Pharmacies are as follows: 33% of the people have a yearly income of above 4 lakhs, 28% of the customers have income 1 lakh to 2 lakhs, while 24% of the customers fall under 2 lakhs to 4 lakhs category and customers income below 1 lakh is 15%.
- Customers' education qualifications: 51% of graduates and customers below the degree level account for 49% of the total customers.
- The results suggested (35%) that the customer is between 45 and 54 years of age. The second highest is in the age range between 35 and 44 years (26 percent). The 26-35 year age group comprises 17% of customers, the 18- to 25 years age group accounts for 12% of all customers, and 13% of buyers were aged above 55 years.
- In the money spent on the e-pharmacies purchase category for a year, 35% of the customers fall under the 3001-5000 rupees group category while 26% of the e-shoppers represent 1000-3000 rupees. 19% of the shoppers from 5000-10000 rupees money spent

category, 11% of the e-pharmacy customers spend more than 10000 rupees for the purchase and 9% of the e-shoppers spend less than 1000 rupees in a year.

- In the frequency of purchase in a year category, 32% of the customers have purchased items in e-pharmacy sites 6-9 times, while 26% of the purchases by e-shoppers made purchases 3-6 times. 26% of the customers purchase more than 9 in a year in e-pharmacy sites. 16% of the purchase are done by less than 3 purchase categories.
- 42% of the purchase was done through debit/credit cards, 23% of the purchase was done by cash on delivery mode. 26% is contributed by internet banking, and others category which includes EMI & wallet money represents 9%.
- Customers have given the following preference when it comes to E-pharmacy sites: 39% of customers preferred Medlife, followed by 23% in other categories (Apollo, Medplus, etc). 16% of customers preferred Pharmeasy, 13% preferred Netmeds, and 9% of the total customers preferred 1mg.

Reliability analysis

Reliability analysis for opinion about purchase intention in the E-pharmacy sites are given below

Table 2. Reliability scores

Cronbach's Alpha	N of Items
.816	37

The component and total reliability scores are shown in table 2. The Cronbach alpha is .816 indicates a high level of internal consistency for the scale.

H₀(Null Hypothesis) – There is no significant relationship between the factors of E-pharmacy website features and Customer intention towards purchasing OTC Products

Table 3. ANOVA for independent variables of E-pharmacy website features and Customer intention towards purchasing OTC Products

E-pharmacy website features and user experience	F	Significance	Result
Reliability	6.896	0.000	Reject H ₀
Web accessibility	8.830	0.000	Reject H ₀
Ease of use	4.966	0.003	Reject H ₀
Attentiveness	4.233	0.607	Accept H ₀
Security	3.666	0.014	Reject H ₀
Credibility	3.186	0.076	Accept H ₀

- From table 3, it is interpreted that the null hypothesis is rejected since the F value is 6.896 and the p-value is 0.000, and hence there is a significant relation between Reliability and customer intention
- It is interpreted that the null hypothesis is rejected since the F value is 8.830 and the p-value is 0.000, and hence there is a significant relation between Web accessibility and customer intention

- It is interpreted that the null hypothesis is rejected since the F value is 4.966 and the p-value is 0.003, and hence there is a significant relation between Ease of use and customer intention
- In the above table, it is interpreted that the null hypothesis is rejected since the F value is 4.233 and the p-value is 0.607, and hence there is no significant relation between Attentiveness and customer intention
- From the table, it is interpreted that the null hypothesis is rejected since the F value is 3.666 and the p-value is 0.014, and hence there is a significant relationship between Security and customer intention
- From table 5.3, it is interpreted that the null hypothesis is accepted since the F value is 3.186 and the p-value is 0.076, and hence there is no significant relation between Credibility and customer intention
- Hence, it is clear that the factors of e-service quality, namely Reliability, Web accessibility, Ease of use, and Security have a significant relationship with customer intention towards purchasing OTC Products. In contrast, factors like Attentiveness and Credibility have no significant relationship with consumer satisfaction.

Table 4. Correlation analysis for factors of E-pharmacy website features and Customer intention towards purchasing OTC Products

Factors	R	Sig	Result
Reliability	0.277**	0.001	Positive
Web accessibility	0.149**	0.000	Positive
Ease of use	0.026*	0.092	Positive
Attentiveness	-0.043	0.604	Negative
Security	0.068	0.407	Positive
Credibility	-0.045	0.026	Negative

Table 4 shows that the factors such as Reliability, Web accessibility, Ease of use, and Security have a positive R-value. Whereas factors like Attentiveness and Credibility have a negative R-value indicating that they should be concentrated to improve Customer intention towards purchasing OTC Products

Table 5. Regression Analysis

Model	R	R Square	Adjusted R Square	Std. error of the estimate	F	Sig.
1	.517 ^a	.267	.236	.85722	3.85722	0.000

Predictors: (constant), namely Reliability, Web accessibility, Ease of use, Attentiveness, Security, and Credibility

Table 6. Regression analysis for factors of E-pharmacy website features and Customer intention towards purchasing OTC Products

Model		Unstandardized Coefficients		Standardized Coefficients	T	Sig.
		B	Std. Error	Beta		
1	(Constant)	2.116	0.537		3.944	0.003
	Reliability	0.180	0.019	0.105	0.154	0.341
	Web accessibility	-0.023	0.087	-0.300**	-0.075	0.025
	Ease of use	-0.057	0.069	-0.313**	-2.278	0.005
	Attentiveness	.143	0.075	0.059	2.115	0.216
	security	0.0214	0.081	0.450**	1.975	0.000
	credibility	0.044	0.049	0.225**	2.683	0.004
a. Dependent Variable: consumer intention to purchase in E-pharmacy						

From Table 6, it is seen that the correlation value of $R=0.517$ states that there is a higher degree of correlation between the factors determining the factors of E-pharmacy website features and Customer intention towards purchasing OTC Products. The R Square value=0.267. The Beta values of the factors Web accessibility (0.300), Ease of use (0.313), Security (0.450), Credibility (0.225) are significant in determining consumer intention in the electronic pharmacy sites. The other factors like Reliability and Attentiveness are not significant and need to be concentrated to improve their contribution

Based on the regression result, the following equation is formulated.

Regression equation (Consumer satisfaction) = 0.105 (Reliability) - 0.300(Web accessibility) - 0.313(Ease of use) + 0.059(Attentiveness) + 0.450 (Security) + 0.225(Credibility).

Table 7. Online Service quality features in e-pharmacies

Construct	Online Service Quality features in E-pharmacy sites	E-Mean	S.D.
Online Service Quality features in e-pharmacy sites			
Reliability			
R1	I received all the products from the online pharmacy which I have ordered.	3.70	1.003
R2	The product/service ordered was delivered on-time	3.63	0.623
R3	The billing process was accurate	3.84	0.681
R4	The online pharmacy website responded positively to the queries raised	3.83	0.928
R5	On-time response about query	3.69	0.955
R6	Information retrieval is easy	3.89	0.748

Web accessibility		
A1. Contact information, customer care number is easily available	3.98	0.863
A2. Easy to connect the customer care person	4.01	0.843
A3 Multiple ordering options are available	4.00	0.921
A4 Chat rooms, bulletins are available	3.90	0.825
Ease of use		
E1 Website is easy to navigate	3.71	0.748
E2 Catalogues are well organized	3.93	0.814
E3 Payment, warranty, and return policies are easy to read/understand.	3.92	0.801
E4 Easy to understand the contents of the pharmacy website	4.40	0.728
Attentiveness		
AT1 Personalized experience provided by the e-pharmacy	4.10	0.817
AT2 Place for consumer questions and comments	3.95	0.842
AT3 I received a personal note from the e-tailer ex: thank you	3.94	0.789
Security		
S1 Secured in providing personal information for online purchase	3.97	0.645
S2 Secured Internet transaction process	3.79	0.882
Credibility		
C1 Online retailer's information is displayed on the website	4.39	0.66
C2 Received special rewards and discounts as promised	4.21	0.693

Table 7 shows the descriptive statistics about the opinion given by the customers in e-pharmacy sites. The maximum value of 4.40 is given to the item - Easy to understand the contents of the website followed by 4.39 is given to Online retailer's information displayed on the site and minimum value of 3.69 given to the On-time response about query followed by 3.63 given to on-time delivery of the product.

Table 8. Types of products purchased in E-pharmacy sites

TYPES OF PRODUCTS	Frequency	Percent
Analgesics	68	30
Personal Hygiene products	35	15
Digestives and enzymes	25	11
Cough syrups and cold tablets	32	14
Vitamins/Supplements	53	23
Others	17	7
Total	230	100

From the above table 8, it shows that analgesics represent 30% of the total products purchased, followed by 23% in the category of Vitamins/Supplements, etc. 15% of the purchase is constituted on Personal Hygiene products, 14% on Cough syrups, and cold tablets, followed by 11% on Digestives and enzymes and balance 7% are represented by others category.

Results

From the analysis, it is clear that the null hypothesis is accepted for Attentiveness, Credibility and rejected in the case of e-pharmacy web quality factors like Reliability, Web accessibility, Ease of use, and Security concerning consumer intention towards purchasing OTC Products. The correlation is positive with respect to factors such as Reliability, Web accessibility, Ease of use, and Security have a positive R-value. In contrast, the factors of Attentiveness and Credibility have a negative correlation indicating that they should be concentrated to improve the consumer intention towards purchasing OTC Products.

From the regression analysis, the factors Web accessibility (0.300), Ease of use (0.313), Security (0.450), Credibility (0.225) are significant in determining the consumer intention towards purchasing OTC Products through E-pharmacies. Factors like Reliability and Attractiveness are not significant and need to be concentrated to improvise their contribution. Descriptive statistics with regard to the opinion given by the e-tailers about consumer intention towards purchasing OTC Products through E-pharmacies. A maximum value of 4.40 is given to the item - Easy to understand the contents of the website, 4.39 is given to Online retailer's information displayed on the site, and minimum value of 3.69 is given to the On-time response about the query, and 3.63 given to on-time delivery of the product.

Analgesics represent 30% of the total products purchased followed by 23% in the category of Vitamins/supplements etc. 15% of the purchase is constituted on Personal Hygiene products, 14% on Cough syrups and cold tablets, followed by 11% on Digestives and enzymes and balance 7% is represented by others category. Customers have given the following preference when it comes to E-pharmacy sites: 39% of customers preferred Medlife, followed by 23% in Other category (Apollo, Medplus, etc). 16% of customers preferred Pharmeasy, 13% preferred Netmeds, and 9% of the total customers preferred 1mg.

Discussion and Conclusions

The estimated delivery time should be adhered to by e-pharmacies because if there is a delay in the delivery time, then the customer dislikes not only the product but also the e-pharmacy site. Hence, the e-pharmacies (i.e.) should focus on improving the delivery strategy as the industry is likely to grow in the near future. The quality of delivery partners should be monitored now and then to increase the reputation of e-shoppers.

Limitations of the study

- This study does not control E-Pharmacy website attributes across various product categories other than OTC Products.
- The sample size may not be very large to generalize the outcome.
- Future research can be done other than OTC Products

Though the e-pharmacies have provided a convenient mode of shopping for the customers, they should focus more on post-purchase behaviour aspects like on-time delivery of the product and providing the On-time response. The estimated delivery time should be adhered by the E-pharmacies. If the customer does not receive the product on time, as mentioned during the purchase time, the customer dislikes not only the OTC product but also the e-pharmacy sites. The quality of vendors also plays a dominant role because if the customer does not get satisfied with the product, they lose not only time, money, and energy but also the reputation with the e-pharmacy site. The online service quality aspects are very important not only for retaining the customers but also creates an environment for customer satisfaction. It spreads positive Word of Mouth (WOM), leading to a win-win approach. The websites for e-pharmacies have health blogs that provide information about pharmacies, such as indications, adverse effects, and dosages. It also informs and raises awareness of different medical issues to promote patient education and awareness. As with the pandemic crisis, everything is shut down while most brick-and-mortar pharmacies remain locked since many consumers have turned online to acquire drugs because of fear of infection and continuous lock-downs that are both chances and problems for the electronic pharmacy worldwide. As we know, the e-pharmacy offers different benefits and an expansion in scope to e-commerce, so that the Indian Government needs to consider improved regulation and can benefit society and the pharmaceutical sector in the years to come.

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