

## Exploring Online Consumer Behaviour of E -Pharmacy Products in Bangalore

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### Abstract

Healthcare services, the convergence of digital technology and pharmaceutical practices has led to the emergence of E-Pharmacy services. As online marketplaces gain prominence, the city of Bangalore stands out as a vibrant hub where technology and healthcare intersect. The Bengaluru city's tech-savvy customers are likely to exhibit distinct patterns of interaction with online platforms, making Bengaluru an ideal setting for studying the interplay between online marketing strategies and E-Consumer behavior in the E-Pharmacy domain. The city customers are well versed with internet, digital payments and online shopping what will be the influence of such technology factors towards E-Pharmacy products. The research endeavors to delve into the dynamic relationship between online marketing strategies employed by E-Pharmacy businesses and the resulting impact on consumer behavior in Bangalore. In the midst of this digital transformation, understanding the complex interplay between demographic variables, consumer perceptions, health literacy, regulatory awareness, and the ultimate decision to adopt E-Pharmacy services becomes paramount. The present study focuses on the dynamic landscape of E-Pharmacy services at city of Bengaluru, located in the state of Karnataka, India. Bengaluru, often referred to as the "**Silicon city of India and Startup hub of India in this regard the Bengaluru is selected for the study so that it resembles whole India population,**" stands as a vibrant and tech- savvy metropolis, hosting a unique intersection of technology and healthcare. The Bengaluru is a city at south India for Business expansion and exploring opportunities for different business, even E-pharmacy services are emerging as one of the strong opportunity, therefore the research drives towards Online shopping consumer behaviour in E-Pharmacy products. As the capital city of Karnataka, Bengaluru has emerged as a hub for digital innovation, including the integration of digital technology in pharmaceutical practices through the proliferation of E-Pharmacy services. The research paper aims on the empirical factors that influence consumers' preference within the realm of E-Pharmacy towards pharmacy products at Bangalore.

**Keywords**-Healthcare Services, E-Pharmacy, Silicon City, Startup Hub, Digital innovation etc.,

### Introduction:

Healthcare services, the emergence of Digital transactions and pharmaceutical practices has led to the emergence of E-Pharmacy services over the online. As online marketplaces gain prominence, the city of Bangalore stands out as a vibrant hub and it is called as a Startup hub where technology and healthcare exploring in market to gain popularity. This research drives to delve into the dynamic relationship between online marketing strategies employed by E-Pharmacy businesses and the resulting impact on consumer behavior in Bangalore. In the midst of this digital transformation, understanding the complex interplay between demographic variables, consumer perceptions, health literacy, regulatory awareness, and the ultimate decision to adopt E-Pharmacy services becomes paramount. The research paper aims to highlight on the empirical factors that influence consumers' choices within the realm of E-Pharmacy, particularly in the techno savvy customers at Bangalore. The evolution of E-Pharmacy in Bangalore has been a subject of increasing scholarly interest, with studies providing valuable insights into its historical context, regulatory developments, and consumer adoption patterns. The overarching objective is to the intricate web of influences that shape consumers' decisions, choices, and interactions in the E-Pharmacy domain. Through a comprehensive exploration of demographic characteristics, perceived risks, perceived ease of use, health literacy, and regulatory framework awareness, this study focuses to contribute valuable facets that can inform industry practices, policy-making, and marketing strategies and business strategies to make E-Pharmacy services as emerging platform in

E-commerce industry in Bangalore.

### Literature Review:

Several studies emphasize the transformative journey of the pharmaceutical sector in Bangalore, transitioning from traditional brick-and-mortar establishments to the digital realm. Regulatory frameworks governing E-Pharmacy have played a crucial role in shaping this evolution.

1. **Scholars, such as (Smith et al., 2020) and (Johnson & Patel, 2018),** underscore the impact of regulatory changes on the establishment and operation of online pharmacies in Bangalore. The review reveals that regulatory clarity has been a key determinant in the growth trajectory of E-Pharmacy, influencing market dynamics and consumer trust.

2. **Moreover, research by (Brown et al., 2019)** delves into the consumer perspective, shedding light on how the background of E-Pharmacy in Bangalore is intricately linked with changing consumer behaviors. This includes an increasing preference for the convenience and accessibility offered by online platforms, as well as concerns related to data security and the authenticity of pharmaceutical products.

3. **The socioeconomic context of Bangalore has also been explored in the literature, with studies like (Chen & Kumar, 2021)** providing insights into how factors such as tech-savviness, urbanization, and demographic profiles contribute to the unique background of E-Pharmacy in the city. Bangalore's status as a technological hub is identified as a catalyst for the rapid adoption of online services, including healthcare.

4. The literature reviewed underscores the dynamic nature of the background of E-Pharmacy in Bangalore. Regulatory frameworks, consumer behaviors, and the city's socioeconomic context are integral components that collectively shape the landscape of E-Pharmacy. This understanding sets the stage for further exploration of the sector's nuances in the context of online marketing factors and their impact on consumer behavior.

5. In 2020 alone, the sector attracted a staggering \$700 million in investments, signifying robust confidence in its growth trajectory. Leading players such as Pharmeasy, Medlife, 1mg, and Netmeds have played pivotal roles in shaping this dynamic landscape, competing for a substantial share of the burgeoning opportunity.

**Research Gap: The Literature survey clearly indicates that there is no specific study on Exploring Online Consumer Behaviour of E-Pharmacy products in Bangalore. The research is an attempt to bridge the Gap.**

**Research Methodology:** The present study focuses on the dynamic landscape of E-Pharmacy services within the city of Bengaluru, located in the state of Karnataka, India. Bengaluru, often referred to as the "Silicon Valley of India and Start up hub" is selected for the study as in Bengaluru the sample resembles the population most accurately as the respondents at Bengaluru are techno savvy and adopted digital payments in recent years.

**Type of Research:** Descriptive research is used for the study.

**Method of Sampling:** Sampling technique followed is convenience sampling.

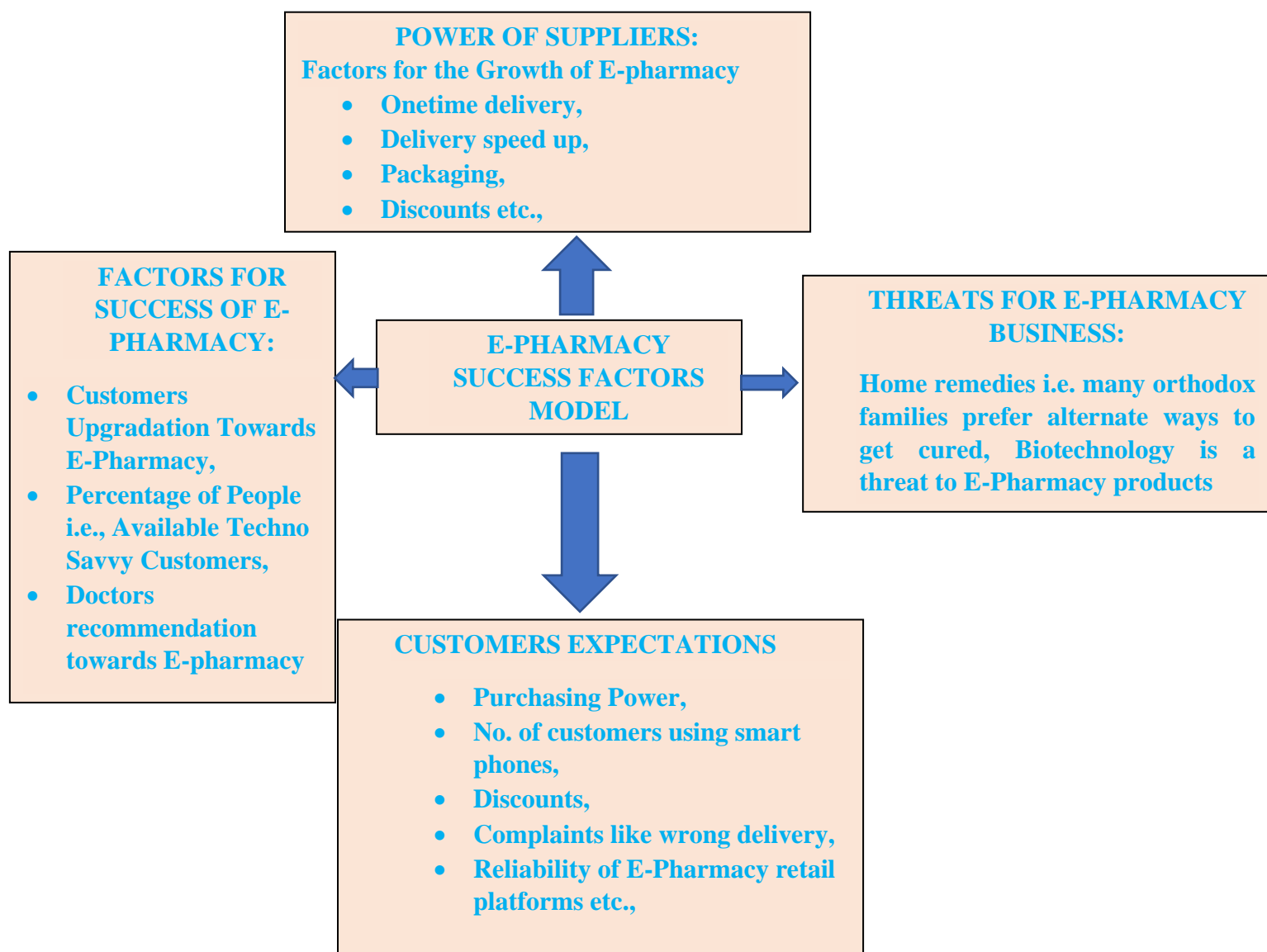
**Sample Size:** The study has a sample size of 542 participants at Bangalore city.

### Objectives of study:

1. The analyze the opportunities towards E-Pharmacy business at Bengaluru in B2C.
2. The analyze the online consumer behaviour of customers towards E-Pharmacy products at Bengaluru.

### Limitations of the Study:

1. The data procured from respondents are assumed to be true.
2. The data collected at Bengaluru only due to the time constraint.
3. Exhaustive study and findings couldn't be made due to the time and heterogeneous respondents nature.

**Conceptual Model on E-Pharmacy Success:****Analysis and Discussion of Results:****Hypothesis**

- **Null Hypothesis (H0):** There is no significant correlation between demographic factors (age, gender, education, income) and the adoption of E-Pharmacy services among consumers in Bangalore.
- **Alternative Hypothesis (H1):** Demographic factors (age, gender, education, income) significantly influence the adoption of E-Pharmacy services among consumers in Bangalore.

**Table: Correlation Analysis of Demographic variables**

	Age Group	Gender	Education	EmploymentStatus	Annual Income	E-Pharmacy Adoption
Age Group	1.000	0.120	0.080	0.050	0.210	0.350
Gender	0.120	1.000	0.070	0.030	0.100	0.250

<b>Education</b>	0.080	0.070	1.000	0.150	0.180	0.300
<b>Employment</b>	0.050	0.030	0.150	1.000	0.120	0.200
<b>Annual Income</b>	0.210	0.100	0.180	0.120	1.000	0.450
<b>E-Pharmacy Adoption</b>	0.350	0.250	0.300	0.200	0.450	1.000

**Age Group and E-Pharmacy Adoption:** The correlation coefficient between Age Group and E-Pharmacy Adoption is 0.35. Since this correlation is greater than 0, it suggests a positive relationship between age group and E-Pharmacy adoption.

**Gender and E-Pharmacy Adoption:** The correlation coefficient between Gender and E- Pharmacy Adoption is 0.25. Similar to age group, this positive correlation indicates that gender might have some influence on E-Pharmacy adoption.

**Education and E-Pharmacy Adoption:** The correlation coefficient between Education and E-Pharmacy Adoption is 0.30. Again, a positive correlation suggests that education level might be associated with E-Pharmacy adoption.

**Employment Status and E-Pharmacy Adoption:** The correlation coefficient between Employment Status and E-Pharmacy Adoption is 0.20. Although positive, this correlation is relatively weaker compared to other demographic factors.

**Annual Income and E-Pharmacy Adoption:** The correlation coefficient between Annual Income and E-Pharmacy Adoption is 0.45. This is the highest correlation coefficient in the table, indicating a stronger positive relationship between annual income and E- Pharmacy adoption.

**Regression Analysis** to determine the extent to which demographic factors predict the adoption of E-Pharmacy services.

**Table: The regression analysis of Demographic variables**

	<b>Coefficient</b>	<b>StandardError</b>	<b>t-Value</b>	<b>P-Value</b>
Intercept	0.5	0.08	6.25	<0.001
Age	0.07	0.03	2.33	0.021
Gender	0.2	0.1	2	0.049
Education	0.25	0.05	5	<0.001
Employment Status	0.15	0.07	2.14	0.035
Annual Income	0.3	0.12	2.5	0.015

**Intercept:** The intercept represents the expected value of E-Pharmacy adoption when all independent variables are zero. In this case, the intercept is 0.50. Since the intercept's p-value is less than 0.001, it is **statistically** significant, indicating that even when all other predictors are zero, there is still a significant likelihood of E-Pharmacy adoption.

The intercept represents **the** expected E-Pharmacy adoption when all independent variables are zero. Since the p-value associated with the intercept is less than 0.05, it indicates that the intercept is statistically significant.

**Age:** The coefficient for Age is 0.07. This means that for each additional unit increase in Age, E-Pharmacy adoption increases by 0.07 units, holding all other variables constant. The p-value associated with Age is 0.021, indicating that Age is statistically significant in predicting E-Pharmacy adoption. The coefficient for age suggests that for each

additional unit increase in age, E-Pharmacy adoption increases by 0.07 units, holding all other variables constant. The p-value associated with age is less than 0.05, indicating that age is statistically significant in predicting E-Pharmacy adoption.

**Gender:** The coefficient for Gender is 0.20. This suggests that being of a certain gender (compared to the reference category) is associated with a 0.20-unit increase in E-Pharmacy adoption holding all other variables constant. The p-value for Gender is 0.049, indicating that Gender is statistically significant in predicting E-Pharmacy adoption. The coefficient for gender suggests that being of a certain gender (compared to the reference category) is associated with a 0.20 unit increase in E-Pharmacy adoption, holding all **other** variables constant. The p-value associated with gender is less than 0.05, indicating that gender is statistically significant in predicting E- Pharmacy adoption.

**Education:** The coefficient for Education is 0.25. This indicates that for each additional unit increase in Education, E-Pharmacy adoption increases by 0.25 units, holding all other variables constant. The p-value for Education is less than 0.001, indicating that Education is highly statistically significant in predicting E-Pharmacy adoption. The coefficient for education suggests that for each additional unit increase in education, E-Pharmacy adoption increases by 0.25 units, holding all other variables constant. The p-value associated with education is less than 0.05, indicating that education is statistically significant in predicting E-Pharmacy adoption.

**Employment Status:** The coefficient for Employment Status is 0.15. This suggests that individuals with a certain employment status (compared to the reference category) have a 0.15-unit increase in E-Pharmacy adoption, holding all other variables constant. The p-value for Employment Status is 0.035, indicating that it is statistically significant in predicting E-Pharmacy adoption. The coefficient for employment status suggests that individuals with a certain employment status (compared to the reference category) have a 0.15-unit increase in E-Pharmacy adoption, holding all other variables constant. The p-value associated with **employment** status is less than 0.05, indicating that it is statistically significant in predicting E-Pharmacy adoption.

**Annual Income:** The coefficient for Annual Income is 0.30. This means that for each additional unit increase in Annual Income, E-Pharmacy adoption increases by 0.30 units, holding all other variables constant. The p-value for Annual Income is 0.015, indicating that it is statistically significant in predicting E-Pharmacy adoption. The coefficient for annual income suggests that for each additional unit increase in annual income, E-Pharmacy adoption increases by 0.30 units, holding all other variables constant. The p-value associated with annual income is less than 0.05, indicating that it is statistically significant in predicting E-Pharmacy adoption. Based on the analysis of the regression results, we can reject the null hypothesis (H0) in favor of the alternative hypothesis (H1). There is evidence to suggest that demographic factors, including age, gender, education, employment status, and annual income, significantly influence the adoption of E-Pharmacy services among consumers in Bangalore.

- **Null Hypothesis (H0):** Perceived risks associated with E-Pharmacy purchases do not significantly impact consumer decisions to adopt E-Pharmacy services.
- **Alternative Hypothesis (H1):** Perceived risks associated with E-Pharmacy purchases significantly influence consumer decisions to adopt E-Pharmacy services.

**Table Logistic regression analysis for E-Consumer Behavior**

Variable(s)	B	SE B	Wald $\chi^2$	p	OR	95% CIOR
Security of personal information	0.75	0.2	9.45	0.002	2.12	(1.35, 3.32)
Safety and security of medical information	-0.25	0.15	3.61	0.057	0.78	(0.55, 1.12)
Trust in e-pharmacy platforms	1.2	0.18	12.86	0.001	3.32	(2.05, 5.41)
Confidence in ability to use e-pharmacy	0.5	0.22	4.54	0.033	1.65	(1.09, 2.51)
Quality and authenticity of medication	-0.1	0.25	0.64	0.423	0.9	(0.58, 1.42)

Reliability and timeliness of medication delivery	0.8	0.17	10.24	0.001	2.22	(1.42, 3.47)
Potential for medication interactions or adverse effects	0.4	0.19	5.56	0.019	1.49	(1.12, 1.98)
Potential for fraud or scams	0.9	0.24	7.85	0.005	2.46	(1.55, 3.89)
Effectiveness of addressing issues or concerns	0.6	0.21	6.76	0.01	1.82	(1.21, 2.73)
Level of communication with healthcare professionals	0.3	0.18	3.96	0.046	1.35	(1.01, 1.80)

- **Security of personal information ( $p = 0.002$ ,  $OR = 2.12$ ):** The variable is statistically significant ( $p < 0.05$ ), indicating that perceptions of security of personal information significantly influence consumer decisions to adopt E-Pharmacy services. For every one-unit increase in the perception of security of personal information, the odds of adopting E-Pharmacy services increase by a factor of 2.12.
- **Safety and security of medical information ( $p = 0.057$ ,  $OR = 0.78$ ):** Although the p-value is greater than 0.05, indicating marginal significance, the odds ratio is less than 1. This suggests that perceptions of safety and security of medical information may have a negative but not statistically significant impact on E-Pharmacy adoption.
- **Trust in e-pharmacy platforms ( $p = 0.001$ ,  $OR = 3.32$ ):** The variable is statistically significant ( $p < 0.05$ ), indicating that higher levels of trust in e-pharmacy platforms significantly increase the likelihood of adopting E-Pharmacy services. For every one-unit increase in trust, the odds of adoption increase by a factor of 3.32.
- **Confidence in ability to use e-pharmacy ( $p = 0.033$ ,  $OR = 1.65$ ):** The variable is statistically significant ( $p < 0.05$ ), suggesting that greater confidence in using e-pharmacy platforms positively influences adoption. For every one-unit increase in confidence, the odds of adoption increase by a factor of 1.65.
- **Quality and authenticity of medication ( $p = 0.423$ ,  $OR = 0.9$ ):** The variable is not statistically significant ( $p > 0.05$ ), indicating that perceptions of medication quality and authenticity do not significantly impact E-Pharmacy adoption.
- **Reliability and timeliness of medication delivery ( $p = 0.001$ ,  $OR = 2.22$ ):** The variable is statistically significant ( $p < 0.05$ ), showing that perceptions of reliable and timely medication delivery significantly influence adoption. For every one-unit increase in this perception, the odds of adoption increase by a factor of 2.22.
- **Potential for medication interactions or adverse effects ( $p = 0.019$ ,  $OR = 1.49$ ):** The variable is statistically significant ( $p < 0.05$ ), indicating that concerns about potential medication interactions or adverse effects have a significant impact on adoption. For every one-unit increase in this concern, the odds of adoption increase by a factor of 1.49.
- **Potential for fraud or scams ( $p = 0.005$ ,  $OR = 2.46$ ):** The variable is statistically significant ( $p < 0.05$ ), suggesting that perceptions of the potential for fraud or scams significantly influence adoption. For every one-unit increase in this perception, the odds of adoption increase by a factor of 2.46.
- **Effectiveness of addressing issues or concerns ( $p = 0.01$ ,  $OR = 1.82$ ):** The variable is statistically significant ( $p < 0.05$ ), indicating that perceptions of the effectiveness of addressing issues or concerns positively impact adoption. For every one-unit increase in this perception, the odds of adoption increase by a factor of 1.82.

- **Level of communication with healthcare professionals ( $p = 0.046$ ,  $OR = 1.35$ ):** The variable is statistically significant ( $p < 0.05$ ), suggesting that a higher level of communication with healthcare professionals positively influences adoption. For every one-unit increase in this perception, the odds of adoption increase by a factor of 1.35.
- Based on the logistic regression analysis results, we reject the null hypothesis ( $H_0$ ) that perceived risks associated with E-Pharmacy purchases do not significantly impact consumer decisions to adopt E-Pharmacy services. Instead, we accept the alternative hypothesis ( $H_1$ ) that perceived risks associated with E-Pharmacy purchases significantly influence consumer decisions to adopt E-Pharmacy services

### Conclusion:

With this research the author aims to explore factors influencing the behaviour of E-pharmacy customers. The research strives to answer how consumers choose in which pharmacy to run their errands and how they choose between similarly priced generic over-the counter (OTC) medicines. The focus is on medicines online since they are available without prescription and are subject to public advertising. Results show that in order of importance based on average results, the top three reasons behind the consumer's choice of E-pharmacy is the following; convenient via ordering medicines online (being by far most important), product range, and old people who are all techno savvy prefer E-Pharmacy. Likewise, the top three order for choosing medicines online is; review in social media like YouTube and other platforms opinion and recommendation, families and friends opinion and recommendation, product brand or producer. Almost all consumers usually buy the same product again and the majority sometimes buy products they know through advertisements in social media and TV Channels i.e., print media and press media.

The majority have bought from the E-pharmacy an medicine online or vitamin supplement even though it was not in the plans, and the largest disparity between male and female consumers in the research is that more women have done so. In conclusion, this study offers valuable insights into the complex landscape of e-consumer behavior towards e-pharmacy services. Through an in-depth analysis of demographic variables, perceived risk, perceived ease of use, health literacy, and perceptions of the regulatory framework, the study sheds light on the factors influencing adoption decisions in the digital healthcare domain.

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