**Library Progress International**
*Vol.44 No. 3, Jul-Dec 2024: P.10748-10759*

*Print version ISSN 0970 1052*
*Online version ISSN 2320 317X*

*Original Article*

*Available online at www.bpasjournals.com*

# Quantifying the Influence of Demographic Variables on the Utilization Trends of Digital Application-Enabled Pharmacy Delivery and Logistic Services: A Comprehensive Analysis

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**How to cite this article:** Prashant Surgonda Patil, Shubham Saxena, Baljeet Kaur, Shreyas Dingankar Gunjan Behl, Shravani Pawar, Alka Dhingra (2024) Quantifying the Influence of Demographic Variables on the Utilization Trends of Digital Application-Enabled Pharmacy Delivery and Logistic Services: A Comprehensive Analysis. *Library Progress International*, 44(3), 10748-10759

**ABSTRACT**

The prevalence of digital application-based pharmaceutical delivery services has experienced a surge in popularity due to the global pandemic. These services let clients to conveniently obtain and receive prescription medications, thereby removing the necessity of visiting a real pharmacy. The utilization of contactless delivery offers an added benefit by guaranteeing the safety of both customers and delivery personnel. The proliferation of e-pharmacy is revolutionizing the healthcare industry by providing patients with improved accessibility and convenience. The objective of this study is to investigate the impact of demographic variables on the adoption of digital app-based medication delivery systems. The present investigation is characterized by its descriptive nature and employs a deductive approach. The study encompasses a wide range of locations, spanning across..... cities. This study is restricted to those who utilize e-Pharmacy applications, including Netmeds, 1mg, Practo, PharmEasy, Apollo Pharmacy, and Medlife. A sample of **175** customers who use e-pharmacies was recruited using a convenience sampling method. The researchers developed a meticulously organized questionnaire by modifying existing studies. The statistical technique employed in this study was the ANOVA test and moderation analysis, which was utilized to analyze the relationship between purchase intention through e-pharmacy apps and demographic characteristics. The results of the current study indicate that demographic factors exert a notable impact on individuals' purchasing intentions with regards to e-pharmacy applications.Age and qualification are statistically significant moderators impacting the purchase intention through e-pharmacy apps. When devising their marketing strategies, e-pharmacy firms should evaluate a range of demographic data, such as age, gender, socioeconomic status, and geographic location, among others.

**KEYWORDS:** Digital App, Pharmacy Delivery Services, e-Pharmacy, Demographic variables, moderation

analysis

## INTRODUCTION

Digital app-based pharmacy delivery services encompass the streamlined and expedient process of procuring and obtaining prescribed pharmaceuticals and additional healthcare commodities via a mobile application **Bhalerao, H., & Mandalik, D. (2022).** These services facilitate the convenience for patients to avoid the inconvenience of physically visiting a pharmacy and instead receive their drugs through home delivery. By utilizing their cellphones, individuals have the convenience of swiftly uploading their prescriptions, selecting preferred items, completing payments, and monitoring the real-time progress of their deliveries **Petrova, G., & Andonova, V. (2021, December).** This novel approach not only enhances efficiency and convenience but also promotes increased availability and compliance with prescription regimens among individuals, particularly those with limited mobility or residing in geographically isolated regions **Parekh, D., et al (2016).**

The popularity of digital app-based pharmaceutical delivery services has increased as a result of the pandemic **Khandelwal, R., et al (2022).** These services facilitate the convenient ordering and delivery of prescription prescriptions to customers, eliminating the need for them to physically visit a pharmacy. The use of contactless delivery provides an additional advantage by ensuring the safety of both clients and delivery personnel **Champagne, D., et al (2015).** The convenience and availability of these applications have significantly transformed the manner in which individuals obtain their prescriptions, rendering them a favored option that extends beyond the scope of the pandemic **Sampat, B., & Sabat, K. C. (2020).** The proliferation of e-pharmacy will engender heightened competition among conventional brick-and-mortar pharmacies, compelling them to embrace comparable delivery services in order to maintain their market relevance **Davies, M. J., et al (2014).** Moreover, this will also result in technological and logistical breakthroughs, so guaranteeing expedited and more streamlined transportation of pharmaceuticals. The availability of pharmacy delivery services provide a viable solution for persons who have encountered difficulties in obtaining their drugs, thereby enhancing convenience and ensuring safety. In general, the expansion of e-pharmacy is transforming the healthcare sector, offering enhanced accessibility and convenience for patients **Sampat, B., & Sabat, K. C. (2022).**

Demographic variables have a crucial role in influencing customer purchasing behavior and the purchase intention of electronic pharmacy applications **Sabbir, M. M., et al (2021).** For example, the younger demographic, characterized by their proficiency in technology and ease with doing online transactions, exhibits a higher propensity to engage with e-pharmacy applications. Conversely, elderly adults who possess limited technological literacy or experience physical mobility constraints may nevertheless exhibit a preference for conventional physical pharmacies **Riantini, R. E. (2020, August).** Furthermore, the use of e-pharmacy apps might be influenced by socioeconomic factors, including individuals' income levels and their accessibility to dependable internet services. Hence, it is imperative for e-pharmacy applications to comprehend and tackle these demographic aspects in order to efficiently serve their intended audience and optimize their market penetration.

The present study seeks to examine the influence of demographic factors on the adoption of digital app-based pharmaceutical delivery services, treating demographic variable as an independent variable as well as a moderator variable . The initial segment of the study provides a comprehensive summary of the research subject matter. The subsequent component of this study centers on the comprehensive review of existing literature. The third section of the paper outlines the research methodologies employed, while the fourth section summarizes the findings of the study. The final segment of this study finishes by addressing its shortcomings and outlining potential avenues for further research.

## REVIEW OF LITERATURE

This study employed a systematic literature review approach to analyze previous scholarly works that were pertinent to the research inquiries under investigation. The articles were sourced from reputed journals and were scrutinized to determine the level of quality exhibited by each study. Elsevier database, Routledge and CRC Press Taylor and Francis database. Emerald Group Publishing database, Springer Nature database and Sage database. Several supplementary articles were acquired from reputable academic databases such as Wiley, Academia, JSTOR, and Guildford Press.

Following is the review of literature -

- **Bandivadekar, S. S. (2023).** An online pharmacy is a company that sells pharmaceuticals and other healthcare products directly to consumers via the internet. Online pharmacies are one of the many types of companies that have moved from brick-and-mortar locations to the virtual world. Customers benefit from online pharmacies in a number of ways, including reduced travel time and expenses. However, there are a number of risks linked with the online selling of drugs, such as the sale of medicines without a prescription, the sale of counterfeit medicines, drug misuse, self-medication, etc.
- **Eger, L., et al (2021).** The study's goal is to help researchers learn how the COVID-19 outbreak has affected consumer behavior. The findings provide evidence of shifts in consumer behavior patterns that became prevalent in the Czech setting during the outset of the second wave of the COVID-19 epidemic. To understand how shoppers of the Baby Boomer, X, and Y generations reacted to the pandemic issue and what concerns they prioritized, a questionnaire survey was done utilizing an online panel in a selected country. We used multiple regression analysis to show that customers' traditional and online purchase habits around COVID-19 changed because of the fear appeal (anxieties for health and economic fears). The results show that there are both generational differences and commonalities in consumer behavior.
- **Richa, D. (2012).** As a relatively new phenomenon in E-Business, online shopping is unquestionably the way of the future for consumers everywhere. Most businesses now have their own websites where they sell goods and services online. While internet shopping is increasingly popular around the world, its expansion into the Indian sector, a sizable and strategically important consumer sector, has lagged behind that of the rest of the world. The idea for a study of online shopping in India was sparked by the sector's potential for expansion. This paper uses qualitative and quantitative research techniques to examine how consumers' demographic characteristics affect key facets of their online shopping experiences. Several demographic variables, including age, gender, marital status, family size, and income, were found to have a considerable impact on the prevalence of online buying among Indian consumers. Researchers and professionals in the field may utilize the study's findings to inform subsequent investigations.
- **Ansari, S., & Farooqi, R. (2017).** Due to the widespread availability of affordable smart phones and reasonable data rates, internet use has skyrocketed in recent years. There has been a meteoric surge in e-commerce over the past few years, paralleling the meteoric rise in internet penetration. Customers' purchasing habits may vary based on moderating factors such their age, income, gender, experience, qualifications, education level, and geographical location. This research intends to conduct an empirical and quantitative investigation of the demographic characteristics that affect online customer behavior using Andrew Hayes' statistical tool PROCESS. The primary goal of this study is to learn how various demographic factors influence consumer spending habits.
- **Xie, Z., Nacioglu, A., & Or, C. (2018).** The primary goals of this research were to assess the extent to which people are using health apps, the demographic factors that are associated with app usage, and the perceived effects of app usage on better health awareness and condition management. It's important to get people of all backgrounds using health applications, but especially those who are underrepresented (men, those with lower socioeconomic status). From a public health standpoint, guidelines may be drafted to aid people in their search for suitable health apps. Health app use may also be increased if developers made their products easier to use.
- **Lee, W. I., et al (2017).** Customers can now buy medical supplies online in addition to in-store at pharmacies, but there aren't enough research examining the role of consumers' desire to buy when it comes to medical supplies. The study's overarching goal is to learn more about the factors that influence consumers' decisions to buy medical equipment online in Taiwan and the People's Republic of China (PRC). With the exception of product quality, the results show that all of the other characteristics positively impacted consumers' propensity to buy. Due to modern society's saturation with advertising, the data also demonstrate that online recommendations rarely sway consumers to make a purchase. Advice will be provided on how SMEs can best grow their internet presence.
- **Fittler, A., et al (2018).** Researchers looked studied how people's demographics, internet habits, and willingness to buy drugs online all correlated with one another. People who buy things online and are regular internet users are more inclined to buy their medications online as well. The propensity to buy medications will also be influenced by age and level of education. There will be a significant increase in the number of people getting their medicines online. Patients are taking a greater risk while shopping for

medications online because of the prevalence of illegitimate sites. Since these initiatives can directly avoid patient safety hazards, we require better patient-provider communication and advertising campaigns to alert the public about the safe use of internet pharmacies.

- **Rajamma, R. K., & Pelton, L. E. (2009).** Marketing leaders, public authorities, and the media are all taking an interest in the growing trend of online pharmacies. Consumers' decisions to purchase and use drugs on their own accord are not without possible dangers and safety concerns, which may explain the spotlight on online distribution channels for these products. The study found that a preference for acquiring medications via electronic retail channels was determined by a combination of powerful others health locus of control and objectivism. Consumers' health-related locus of control, objectivism, and online pharmacy purchases are all linked, with health value serving as a moderator.
- **Fatima, S., et al (2019).** The market for pharmaceuticals purchased online is expanding rapidly. Online pharmacy sales are growing in popularity among Indian consumers. In addition to cheap prices, convenient services like home delivery, quick access, and reminders are offered by online pharmacies. As a result, it is more crucial than ever before for marketers to consider their target audience's frame of mind. No literature has been found that differentiates between generic and non-generic internet medicine purchases in the Indian environment. This highlights the need for further study into how customers choose between generic and nongeneric medicines when purchasing online.
- **Baid, A. N.; Ghosh, A. (2021).** The online pharmacy market in India is the focus of this unique study. Factors that influence customers' decisions to buy prescription medications and other medical supplies via the internet are investigated. The study seeks to establish the relationship between the numerous criteria and their contribution towards the ultimate buying decision. Attribute independence with respect to several demographic variables has been hypothesized and tested.
- **Bansal, S., (2022).** The number of people using the Internet to do their shopping and selling has skyrocketed. This applies even to the purchasing of prescription drugs. While buying drugs online has many advantages, there are also some dangers involved. Prescription medications were the most popular drug type that respondents were willing to buy online, followed by cosmetics and dietary supplements. Based on findings, it appears that the majority of people who are interested in purchasing medication without first consulting a doctor conduct their search online. Therefore, the future of online pharmacies can be enhanced with user education, awareness, and adherence to established norms.
- **Roshini and G. M. Pavithra. (2021).** The pharmaceutical industry in India is the third largest and fastest growing industry in the country. Consumers are accustomed to ordering drugs with a click of a button rather than making a journey to a pharmacy store, making online drug purchases the most typical practice worldwide at the present time. Consumers should be aware of the existence of such outlets because they sell both illegal and unlicensed medications. This analysis focuses on some of the most fundamental problems that have been seen in internet pharmacies. In this analysis, we compare and contrast traditional pharmacies with their online counterparts, outlining the benefits of each.
- **Mahesh, A. R., et al (2020).** A significant expansion in the netizen population in India has regarded major developments in the field of retail pharmacy in recent few decades. Prescription practices have shifted. It has been observed that the pharmaceutical retail marketing methods have become more diverse, which has improved and accelerated the timely delivery of medications to patients. It has been hypothesized that students and younger patients, due to their greater familiarity with the Internet, are more inclined to make use of online pharmacies.

**Research Gap**

The predominant focus of existing research on online consumer purchasing behavior pertains to the domains of food, apparel, and gadgets. There is a limited body of research that specifically examines pharmaceutical applications. It is imperative for academics and service providers to comprehend the significance of demographic characteristics in relation to the adoption of digital app-based pharmacy delivery services. The adoption of services can be greatly influenced by demographic variables, such as age, gender, income, and education level. Hence, more investigation in this domain would yield significant knowledge regarding the determinants of pharmaceutical app acceptance, thereby enhancing marketing tactics and service provisions. The present study seeks to address this research gap by examining the influence of demographic characteristics on the uptake and

utilization of digital app-based pharmacy delivery services through moderation analysis.

**The objectives of the study are:**

- To understand the Medicine purchase intention of customers using Pharmaceutical digital applications
- To analyse the moderation effect of demographic variables on the purchase intention of customers using Pharmaceutical digital applications

## RESEARCH METHODS

The current study is descriptive in nature and is based on deductive approach, the study is carried out across ……. The study is limited to the users of e-Pharmacy apps such as Netmeds, 1mg, Practo, PharmEasy, Apollo Pharmacy, and Medlife. A convenience sample of 175 e-pharmacy customers was selected. A well structured questionnaire was prepared by adapting to the study of **Nayak, B., et al (2023).** Since the study is based on understanding the perception and expectation based on demographic variables, ANOVA test was used as the statistical technique for the study **McHugh, M. L. (2011).** One-way analysis of variance (ANOVA) is used to assess if two or more independent (unrelated) groups have statistically significant variations in means. It is usually used with three or more groups **Kim, T. K. (2017).** The following assumptions of ANOVA test assumptions are confirmed.

1. Continuous dependent variables should be assessed at the interval or ratio level.
2. Independent variable should have two or more categorical, independent categories. A one-way ANOVA is usually used for three or more categorical, independent groups, but it can be used for two (an independent-samples t-test is more popular).
3. Observations are independent, meaning there is no relationship between or within groups. Each group must have unique participants, with no repeats.
4. No notable outliers. Outliers are singular data points that deviate from the norm.
5. Dependent variable should be approximately regularly distributed for each independent variable category.
6. Variances must be homogeneous.

The ANOVA test was carried out using the SPSS software. **George, D., & Mallery, M. (2003).**

To assess the moderation effect of demographic variables o the relationship between e-pharmacy apps and purchase intention of consumers , Andrew Hayes process macro Model -1 with multi-categorical moderation is used **Hair Jr, et al (2021).** The multi-categorical moderation allows for the examination of different levels of demographic variables such as age, gender, and income on the relationship between e-pharmacy apps and purchase intention. This model helps to determine if certain demographic groups have a stronger or weaker effect on the relationship **Rasoolimanesh, S. M., et al (2021).** The findings from this analysis can provide valuable insights for e-pharmacy app developers and marketers in tailoring their strategies to specific demographic segments to maximize purchase intention. **Memon, M. A., et al (2019).**

## RESULTS AND DISCUSSION

### Demographic profile

The demographic profile of the participants in the study show that 47.4% are female and 52.6% are male. 34% participants in the study are in the age group of 31-40 years, 18.2% are in the age group of 41-50 years. 23.9% participants each belonged to the age bracket of 18-30 years and above 50 years. 46.4% participants in the study have completed their bachelor's degree and 31.3% have completed their master's degree. 12.2% have completed their intermediate education and small percentage of 2.9% have completed their secondary education. A majority of 66.5% are married and 33.5% are unmarried. 40.4% participants earn between 5 Lakhs-10Lakhs and 30.9% participants earn above 10 lakhs annually.

### Testing of Hypotheses

H1 – There is a significant impact of demographic variables on the perception and expectations of the customers towards after sales services provided by the automotive companies

The objective of the hypothesis is to examine the influence of age, gender, qualification, and occupation on customers purchase intention through e-pharmacy apps. Given that the demographic variables are categorical in character and the Purchase intention are continuous in nature, it is deemed most suitable to employ an analysis of variance (ANOVA) test. By employing an analysis of variance (ANOVA) test, it is possible to evaluate the degree

to which these variables exert an influence on purchase intention through e-pharmacy apps , thereby offering useful insights for enhancing customer satisfaction.

*Table 1 – ANOVA Results for impact of demographic variables on the adoption of e-pharmacy services*

| | **Age** | | **Gender** | | **Qualification** | | **Occupation** | |
|---|---|---|---|---|---|---|---|---|
| | F statistics | P value | F statistics | P value | F statistics | P value | F statistics | P value |
| **I purchase medicines from e-pharmacy apps** | 33.088 | *** | 43.903 | *** | 112.98 | *** | 18.902 | *** |
| **I prefer to shop through e-pharmacy apps** | 12.334 | *** | 14.887 | *** | 8.932 | *** | 13.098 | *** |
| **The benefits of e-pharmacy apps are evident** | 34.667 | *** | 54.892 | *** | 37.012 | *** | 93.452 | *** |

The table presents the results of the analysis of variance (ANOVA) in the form of F statistics and p-values. The F statistics provide a measure of the importance of the observed differences between the several groups under investigation in the study. A higher F statistic indicates an increased probability that the observed differences are not attributable to random variation. The p-values, conversely, offer empirical support for either rejecting or accepting the null hypothesis. When the p value is lower than the predefined alpha level, which is usually set at 0.05, it suggests that the observed differences are statistically significant and unlikely to be attributed to random fluctuation.

**Moderation Analysis for Impact of Age on the relationship between e-pharmacy applications and Purchase intention**

| | | | | |
|---|---|---|---|---|
| H1 | Age | → | Purchase of medicine through Dig Apps | Accepted |

The direct relationship between age and purchase intention of medicines through e-pharmacy apps is statistically significant at p=0.000 as seen in table 1 . The researcher then conducted a moderation analysis to ascertain the impact of Age on the relationship between impact of e-pharmacy applications on Purchase intention when age is a moderator. The results shared in the Table -2 show that age is a significant moderator with p value of 0.006 and change in purchase intention at a co-efficient of 0.017. The further visual interaction of the moderating relationship of age is shown in the chart -1.

*Table 2 - Moderation analysis results for impact of e-pharmacy applications on Purchase intention when age is a moderator*

| |
|---|
| **Model : 1** |
| **Y : Purchase Intention (Dependent variable)** |
| **X : e-pharmacy applications (Independent variable)** |
| **W : Age (Moderator- Multi categorical variable)** |
| |
| **Sample** |
| **Size: 175 (Customers)** |
| |
| **OUTCOME VARIABLE:** |
| **PI** |
| |
| **Model Summary** |

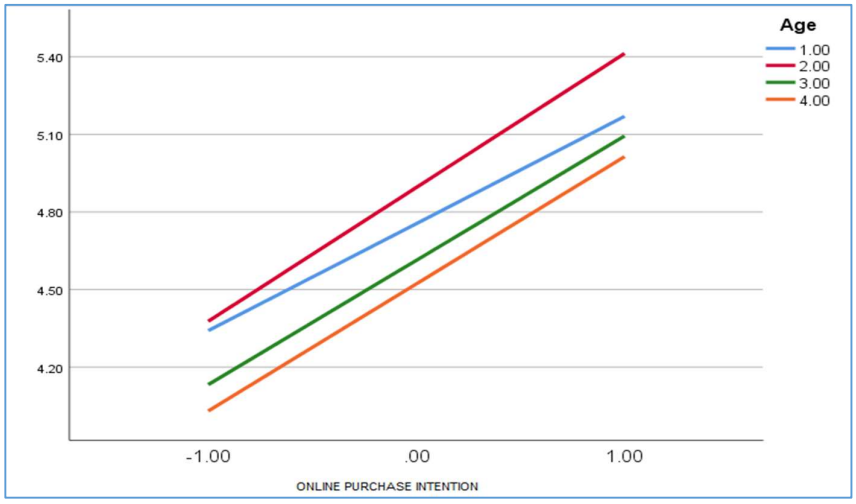
| **R** | **R-sq** | **MSE** | **F** | **df1** | **df2** | **p** |
|---|---|---|---|---|---|---|

| | | | | | | |
|---|---|---|---|---|---|---|
| .497 | .247 | .671 | 47.058 | 7.000 | 1002.000 | .000 |

| Model | | | | | |
|---|---|---|---|---|---|
| coeff | se | t | p | LLCI | ULCI |
| constant | 4.755 | .036 | 132.579 | .000 | 4.685 | 4.826 |
| EPHAR | .416 | .035 | 11.892 | .000 | .348 | .485 |
| W1 | .140 | .060 | 2.349 | .019 | .023 | .257 |
| W2 | -.142 | .080 | -1.773 | .016 | -.299 | .015 |
| W3 | -.233 | .113 | -2.071 | .039 | -.455 | -.012 |
| Int_1 | .103 | .061 | 1.695 | .010 | -.016 | -.223 |
| Int_2 | .066 | .083 | .795 | .027 | -.098 | - .230 |
| Int_3 | .078 | .106 | .730 | .006 | -.131 | - .286 |

| Test(s) of highest order unconditional interaction(s): | | | | | |
|---|---|---|---|---|---|
| R2-chng | F | df1 | df2 | p | |
| X*W | .017 | 1.059 | 3.000 | 1002.000 | .006 |

*Chart 1 - Moderation analysis results for impact of e-pharmacy applications on Purchase intention when age is a moderator*




The four lines indicate the 4 age groups of customers in the study, where 1= 18 to 30 years, 2=31 to 40 years, 3=41-50 years and 4= Above 50 years. The steepness of the line graphs show how mean scores for purchase intention changes with age. The Pink line indicating the 2nd age group of 31-40 years has a steeper line indicating that customers in this age group have highest impact on purchase intention followed by those in age group 1.

The findings shows that purchase intention of medicines through e-pharmacy applications is greatly influenced by the age of the clients. The adoption of digital app-based pharmacy delivery services is more prevalent among younger customers. The aforementioned phenomenon can be ascribed to individuals' high level of technological proficiency and ease, coupled with their openness to adopting novel and inventive approaches to address their healthcare requirements. In contrast, older clientele may exhibit greater reluctance in embracing these services owing to apprehensions surrounding issues such as privacy, security, and the absence of face-to-face engagement with healthcare practitioners. Hence, it is vital to comprehend the significance of age demographics in order to efficiently target and promote digital app-based pharmacy delivery services.

**Moderation Analysis for Impact of gender on the relationship between e-pharmacy applications and Purchase intention**

| | | | | |
|---|---|---|---|---|
| H2 | Gender | → | Purchase of medicine through Dig Apps | Accepted |

The direct relationship between gender and purchase intention of medicines through e-pharmacy apps is statistically significant at p=0.000 as shown in table 1. The researcher then conducted a moderation analysis to ascertain the impact of gender on the relationship between impact of e-pharmacy applications on Purchase intention when gender is a moderator. The results were insignificant and hence further analysis was not carried out.

The purchase intention of medicines through e-pharmacy apps is not greatly influenced by the gender of the customers. Research findings indicate that there is a higher propensity among females to utilize digital app-based pharmacy delivery services in comparison to males but the moderation effect is insignificant. There are several factors that may contribute to this phenomenon, including considerations of convenience, accessibility, and a greater degree of technological familiarity.

**Moderation Analysis for Impact of Qualification on the relationship between e-pharmacy applications and Purchase intention**

| | | | | |
|---|---|---|---|---|
| H3 | Qualification | → | Purchase of medicine through Dig Apps | Accepted |

The direct relationship between qualification and purchase intention of medicines through e-pharmacy apps is statistically significant at p=0.000 as seen in table 1 . The researcher then conducted a moderation analysis to ascertain the impact of qualification on the relationship between impact of e-pharmacy applications on Purchase intention when qualification is a moderator. The results shared in the Table -3 show that qualification is a significant moderator with p value of 0.010 and change in purchase intention at a co-efficient of 0.036. The further visual interaction of the moderating relationship of age is shown in the chart -2.

*Table 3 - Moderation analysis results for impact of e-pharmacy applications on Purchase intention when qualification is a moderator*

| | |
|---|---|
| **Model : 1** | |
| **Y : Purchase Intention** | (Dependent variable) |
| **X : e-pharmacy** | (Independent variable) |
| **W : Qual** | (Moderating – Multi categorical variable) |

| |
|---|
| **Sample** |
| **Size: 175 (Customers in the study)** |
| **OUTCOME VARIABLE:** |
| **PI** |

**Model Summary**

| R | R-sq | MSE | F | df1 | df2 | p |
|---|---|---|---|---|---|---|
| .489 | .239 | .679 | 44.866 | 7.000 | 1002.000 | .000 |

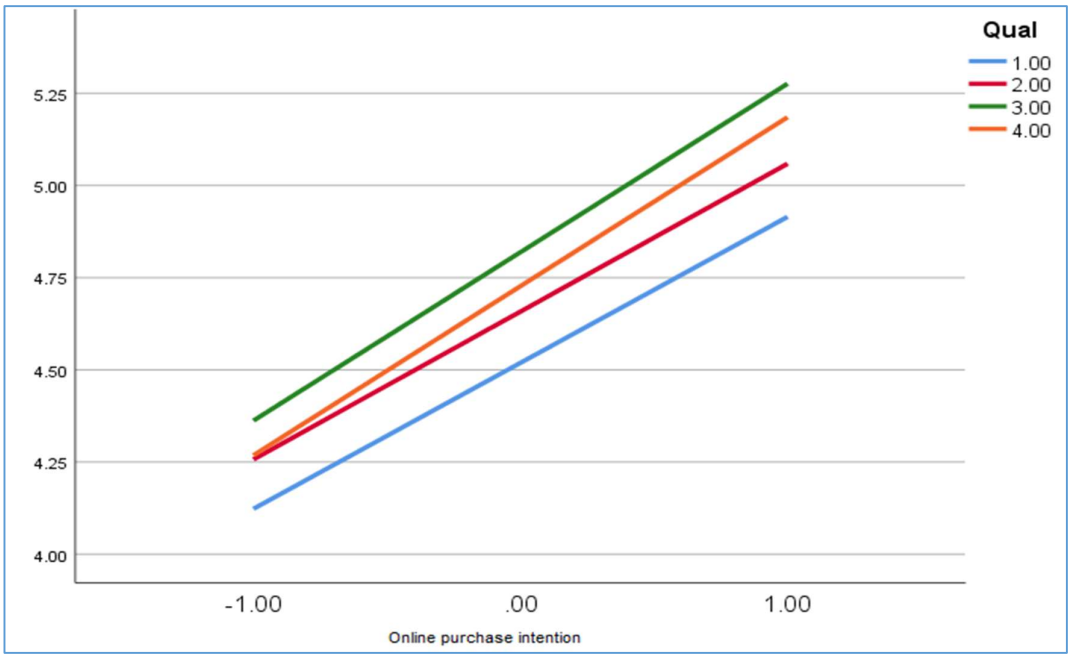
**Model**

| | coeff | se | t | p | LLCI | ULCI |
|---|---|---|---|---|---|---|
| constant | 4.519 | .136 | 33.291 | .000 | 4.253 | 4.785 |
| EPH | .397 | .151 | 2.625 | .009 | .100 | .694 |
| W1 | .139 | .160 | .868 | .386 | -.175 | .454 |
| W2 | .300 | .140 | 2.140 | .033 | .025 | .575 |
| W3 | .208 | .144 | 1.448 | .148 | -.074 | .489 |

| | | | | | | |
|---|---|---|---|---|---|---|
| **Int_1** | **.006** | **.173** | **.032** | **.004** | **-.334** | **-.345** |
| **Int_2** | **.061** | **.155** | **.394** | **.004** | **-.244** | **-.366** |
| **Int_3** | **.063** | **.158** | **.400** | **.009** | **-.247** | **-.373** |

| **Test(s) of highest order unconditional interaction(s):** | | | | | |
|---|---|---|---|---|---|
| | **R2-chng** | **F** | **df1** | **df2** | **p** |
| **X*W** | **.038** | **.181** | **3.000** | **1002.000** | **.010** |

*Chart 2 - Moderation analysis results for impact of e-pharmacy applications on Purchase intention when qualification is a moderator*




The four lines indicate the 4 qualification groups of customers in the study, where 1=Secondary education, 2=Intermediate education, 3= Graduation and 4= Post graduation. The steepness of the line graphs show how mean scores for purchase intention changes with qualification. The green line indicating the 3rd qualification group of graduates has a steeper line indicating that customers in who have completed their graduation have highest impact on purchase intention followed by those in age group 4 , the post graduates.

The purchase intention of medicines through e-pharmacy apps is greatly influenced by the qualification of the customers. The moderation analysis shows is a positive correlation between customers' educational attainment their propensity to utilize digital app-based pharmacy delivery services. There is a suggestion that pharmacy delivery services may enhance their marketing strategies by focusing well-educated individuals with the aim of augmenting the rates of adoption.

**Moderation Analysis for Impact of Qualification on the relationship between e-pharmacy applications and Purchase intention**

| | | | | |
|---|---|---|---|---|
| H4 | Occupation | → | Purchase of medicine through Dig Apps | Accepted |

The direct relationship between occupation and purchase intention of medicines through e-pharmacy apps is statistically significant at p=0.000 as shown in table 1. The researcher then conducted a moderation analysis to ascertain the impact of occupation on the relationship between impact of e-pharmacy applications on Purchase intention when qualification is a moderator. The results were insignificant and hence further analysis was not

carried out.

The purchase intention of medicines through e-pharmacy apps is greatly influenced by the occupation of the users but is insignificant when taken as a moderating variable. Individuals with demanding occupations or extended work schedules may discover it to be more expedient to utilize digital, application-based pharmacy delivery services. This is due to the fact that they may conveniently request their prescribed drugs from the convenience of their workplace or residence. Conversely, those employed in occupations that do not have significant time commitments may exhibit a preference for conventional approaches to procuring medications. Hence, the occupation of individuals significantly influences the extent to which they utilize digital app-based pharmacy delivery services. There is a suggestion that the use of digital app-based pharmacy delivery services could offer notable advantages to those engaged in high-demand occupations, such as doctors, nurses, or firefighters. These professionals frequently work non-standard hours and may encounter difficulties in accessing traditional pharmacies due to time constraints.

**CONCLUSION**

Marketing organizations engage in research to examine the influence of demographic variables on consumer purchasing behavior and preferences pertaining to digital app-based pharmacy delivery services. The researchers conduct an analysis of many parameters, including age, gender, income level, and geography, in order to gain insight into the impact of these variables on the adoption of those services. This study assists marketing firms in customizing their approaches and focusing on particular demographic groups through targeted marketing efforts, resulting in a higher adoption rate of digital app-based pharmaceutical delivery services across various customer categories.

The present research demonstrates that demographic characteristics have a significant influence on individuals' buying intention towards e-pharmacy applications. When formulating their marketing strategies, e-pharmacy enterprises should take into consideration many demographic variables, including but not limited to age, gender, economic level, and geographical area. For instance, it is possible that younger individuals exhibit a higher level of proficiency in technology and display a greater willingness to utilize pharmacy delivery services facilitated through mobile applications. Conversely, older individuals may necessitate further guidance and instruction to develop a sense of ease and familiarity with this particular notion. Furthermore, the accessibility of traditional physical pharmacies can be influenced by income level and geographical location, hence becoming app-based services a more attractive alternative for individuals residing in rural or low-income regions. By comprehending these elements and customizing their marketing strategies accordingly, e-pharmacy enterprises can enhance their likelihood of achieving success and appealing to a broader spectrum of consumers. One potential strategy for increasing awareness and promoting the adoption of e-pharmacy services is to focus on younger consumers by using social media platforms and implementing incentives like as complimentary delivery or discounted prices. In contrast, elder consumers may derive advantages from individualized training or specialized customer support services that cater to their specific needs and address any inquiries or uncertainties they may encounter. In addition, establishing collaborations with community organizations or healthcare providers can facilitate the expansion of e-pharmacy enterprises to rural or economically disadvantaged regions, so granting residents the convenience and accessibility that may otherwise be lacking. By incorporating these variables into their decision-making process and adjusting their marketing approaches accordingly, e-pharmacy enterprises may effectively penetrate a broader market segment and solidify their reputation as a reliable and accessible healthcare alternative.

**SCOPE FOR FURTHER RESEARCH**

The present study is grounded in demographic data, while future investigations may consider additional economic elements in order to assess the purchasing intention towards e-Pharmacy applications. Moreover, it would be intriguing to investigate the impact of cultural variables on the acceptance and utilization of app-based pharmacy delivery services. The examination of the impact of diverse cultural origins on individuals' perceptions and actions regarding technology and healthcare holds significant potential for enhancing the usability and accessibility of these services. Moreover, conducting a study on the influence of educational background on the adoption of e-Pharmacy applications could provide insights into the significance of knowledge and awareness in promoting the utilization of these handy and time-efficient services.

Future researchers may also direct their attention towards examining the influence of personality features on the adoption of e-pharmacy services. It is plausible that persons with specific personality traits may exhibit a greater propensity to utilize technology-driven healthcare alternatives. Gaining insight into these associations can

facilitate the customization of marketing strategies and the creation of user-centric interfaces that accommodate diverse personality profiles. Furthermore, a thorough analysis of the impact of socioeconomic variables, such as individuals' income levels and their accessibility to healthcare facilities, on the utilization of electronic pharmacy applications might yield significant insights for mitigating healthcare inequalities and enhancing overall healthcare results.

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