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# Factors Influencing the Consumers' Willingness to Use of Ayurvedic Patent Medicines in Kerala Market

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**Abstract:** There has been a tremendous growth in the production of patented Ayurvedic drugs for the past ten years in Kerala. In this study the researcher attempts to identify the factors influencing the consumers, who use Ayurveda patent drugs in the Kerala by studying 450 consumers. For the purpose of research, factor analysis has been carried out and multiple regression analysis has been used to measure the functional relationship between the variables. Empirical result also reveals that cost, convenience, communication from others and consumer's needs and wants are the major factors that influenced the consumers to use patent drugs. This study suggests that the consumers of patent medicine are not completely satisfied with reasonableness of price of the patent medicines. The empirical findings also suggest that if the pharmaceutical companies of Kerala could take proper patent, it will create a paradigm shift in the Ayurvedic treatment of Kerala.

## 1. Introduction

The word *Ayurveda* is originated from Sanskrit, in which *Ayur* means life and *Veda* means wisdom**.** It is viewed as perhaps the most established arrangement of medicinal known to the humanity. A portion of the idea of Ayurveda exists from the time of Indus Valley civilization or essentially before it. Ayurveda is based on an individual move towards to correct imbalances before they expand into diseases. It names three elemental substance of *'doshas'* such as *Vata, Pitta and Kapha*, the balance of which results in health, while the imbalance causes diseases.

The traditional knowledge in Ayurveda gives great opportunities for IPR, especially, in patents. Shukla (2010) argue that a new form of IPR protection in traditional medicines has emerged which ensures sustainable development in IPR climates, especially in patents. Lemley (2004) found that many of the legal principles governing intellectual property rights have evolved over centuries, it was not until the 19th century that the term intellectual property began to be used, and in the late 20th century it became commonplace in major parts of the world.

Recently, the Ayurveda pharmaceutical industries have been converting their production from traditional medicines to patent and proprietary medicines. India is a pioneer in the field of different conventional meds. She has been gifted with a large repository of medicinal plants by the nature and rich Ayurvedic texts that prescribe guidelines for the preparation of medicinal combinations. Such traditional wisdom coupled with the supply of abundant medicinal plants ensured by the nature helps the manufactures to produce patented products for the benefit of the society. The twenty first century saw an insurgency in Ayurveda area, particularly, in patent medications. Medications made to lighten knee torment; back torment, skin health management illnesses and hair issues are the features of this achievement. This was to a great extent contributed by the logical development in patent medication. The present study tries to investigate the factors influencing consumers to use patent drugs in the Kerala Ayurvedic market.

## 2. Review of Literature

Of recent, the Ayurveda firms have tried to improve their operations through patent drugs. Nowadays, world economy is patent based economy and firms are turning to patent their drugs or medicines. Giroud and Godfraind (2007) noted that the basic intention of an Ayurvedic firm is to patent its products to reduce cost and improve the return on investment.

Vast majority of the organizations accept that it is an approach to improve their presentation through development and creating benefit from the business. Patents in Ayurveda industry have brought more changes in treatments. It not only affects the treatments, but also gives the importance to life expectancy. Knauft (2002) found that the Ayurveda pharmaceutical research is essential for identifying the changes related to medicines and treatments. The creative interaction of the Ayurveda business demonstrates a type of elective innovation that varies from mechanical exchange.

Patents in Ayurveda intend to bring innovation in Ayurveda medicines and it facilitates the quality of medicines available to the general public. In the colonial age, there was huge biomedical knowledge in Ayurveda through traditional medicines. Harrison and Pati (2002) found that the effective traditional medicines can be easily converted into a patented one as per the regulation provided by the law.

According to Rao (2007), the 9 P's of marketing is to measure the success of pharmaceutical drugs in the market. He explained that price, product, place, promotion, personal selling prescription, policy, power and public relation are the critical factors which determine the success of pharmaceutical marketing. In modern marketing, the manufactures take attention in consumers' needs and wants, cost affected to them, communication of products and convenience that they have to face when they buy a product. The author have also mentioned that the importance of advertisement and sales force promotion strategies carried by the firm to attract the consumers into particular products. Advertisements play a significant role in communication of various benefits of pharmaceutical drugs *i.e.* affordability, accessibility and quality of products. There is a recent trend, that consumers are moving OTC use of drugs in markets. As the manufacturing has taken serious attention to classify the categories are related to prescription and non-prescription drugs available in the market. In the same

time, Smith (1997) found that the relationship maintained with doctor by the manufacturing firm is essential to promote their drugs in the market.

Vijay (2006) in her thesis on "A study on impact of direct to consumer's pharmaceutical marketing under Indian conditions" An investigation was led in Mumbai to quantify the effect of advertisement in promotion of significant prescriptions. It was tracked down that the ads have assumed critical part and positive connection between deals of medicines. The examination has brought to the light that purchasers' discernment on minor diseases was cured without specialist conference and significant afflictions. In the current market, buyers do not have sufficient opportunity to visit specialists for their minor sicknesses and intrigued to purchase the medication through OTC. It is an alarm for the manufactures to study the rational behaviour of consumers regarding affordability and acceptability of the medicines available in the market.

Human culture consistently longed for a reasonable arrangement of medical care. Modern system of medication has taken quick steps frequently with mystical answers for issues of wellbeing. Yet, it is costly and at times unreasonably expensive to people in general. In this specific situation, there is unique importance for Ayurveda, which is bound to be a socially pertinent method medication. Ayurveda has consistently kept a set of principles for a solid brain for a sound body. Due to its impact on the society, people have started practicing yoga, meditation, self-regulation and moderation, hence, Tara (2002), found that Ayurveda has a strong tradition and sober effect on human beliefs.

At present, lack of standardization and quality control in Ayurvedic medicine is a major hurdle for marketing it internationally. One of the most relevant questions faced by the Ayurveda manufacturers is about reaching this international market. The last decade of industrialization has led to commercialization, and manufacturers concentrated on patented medicines along with traditional medicines. As of now, traditional medications have been supplanted by patent medications, which prepare for patent medications to the worldwide market. The patentability has brought an identity for Ayurveda drugs in the home-grown market, however at the worldwide level moreover. Patents remind so as to standardization of raw drugs is an absolute necessity, because, to get standardized product, use of standardized raw materials is essential. According to Prajapathi (2002), standardization means assurance of the quality of drugs and formulations, efficacy and genuineness in terms of measurable parameters. Similarly, Varrier (2002) found that standardization and quality control should be taken care of to promote export of Ayurvedic medicines to make Ayurveda popular and acceptable to the people at large.

During the most recent twenty years, the patent has been drastically changing the field of Ayurveda in Kerala. Ayurvedic patent meds are showcased in different structures. The fundamental ones are tablets, pills, powders, matured items (Asava-Arishta), decoctions and cured fats (Ghrita and Tel). For skin use, drops, creams, moisturizers, liniments and treatments are accessible. According to Sharma (1987), dried plant extracts in capsule form are also used by the Ayurveda consumers. Similarly, the consumers use the patent drugs of different manufacturers. There are various reasons that encourage consumers to use patented drugs. Hence, it is important to check the factors that influence the consumers to use patented medicines or drugs.

## 3. Objectives of the Study

The main objectives of this study are:

- To determine the factors influencing consumers to use patent drugs in the Kerala Ayurvedic market.
- To find out the relationship between various factors and consumers usage of patent drugs.

## 4. Research Methodology

This study is deliberate as a descriptive one based on primary data. A well-structured questionnaire and schedule have been used to collect the data. The questionnaire has been designed for the consumers and the questions are framed after consulting with experienced dealers and doctors in the field of Ayurveda. The questionnaires are validated by conducting a pilot study. The reliability test was conducted for the data available through questionnaire. Cronbach Alpha Reliability test was conducted to measure the reliability of the data. The data set of questionnaire and its cronbach alpha was 0.743.

The population related to this examination is very enormous and spread all through the territory of Kerala; it is beyond the realm of imagination to expect to direct a population study. Consequently, a sample study has been directed and multi stage sampling technique has been utilized in this examination.

In the first stage of sampling, the total Ayurveda manufacturing from 14 districts in Kerala was recognized from government sources. Table 1 shows the district wise distribution of Ayurveda manufacturing units in Kerala.

**Table 1: District wise Ayurveda Manufacturing Units in Kerala**

| *No. of Districts* | *Name of the Districts* | *Ayurveda Manufacturing Units* |
|---|---|---|
| 1 | Thiruvananthapuram | 93 |
| 2 | Kollam | 122 |
| 3 | Pathanamthitta | 32 |
| 4 | Alappuzha | 32 |
| 5 | Kottayam | 43 |
| 6 | Idukki | 8 |
| 7 | Ernakulam | 124 |
| 8 | Thrissur | 144 |
| 9 | Palakkad | 68 |
| 10 | Malappuram | 65 |
| 11 | Kozhikode | 83 |
| 12 | Wayanad | 5 |
| 13 | Kannur | 69 |
| 14 | Kasargod | 7 |

*Source:* Directorate of Industry & Commerce, *www.industry.kerala.govt.in*

Here, the manufacturing units are varying sizes, thusly, simple random sampling is not an appropriate technique; it has been assured that the sample selection technique adopted is in proportion to the size of the units. Probability Proportional to Size (PPS) sampling method through Lahiri's technique (Mukhopadhyay, 2014b) guarantees meeting the prerequisite of sample districts and three district chose are Thrissur, Thiruvanathapuram and Kozhikode through PPS strategy.

In the second stage, the researcher identified the large scale Ayurveda manufacturers in Kerala with respect to the year of establishment and number of patent drugs produced by them. Table 2 explains the status of large scale Ayurveda manufacturing units in Kerala.

**Table 2: Leading Large Scale Manufacturers in Kerala**

| *No.* | *Year of Establishment* | *Name of the Firm* | *No. of Patent Drugs* |
|---|---|---|---|
| 1 | 1902 | Arya Vaidya Sala, Kottakkal | 43 |
| 2 | 1920 | SNA Oushahasala | 15 |
| 3 | 1921 | Sitram Pharmacy | 21 |
| 4 | 1941 | Vaidyaratnam Oushahasala | 14 |
| 5 | 1943 | The Arya Vaidya Pharmacy | 17 |
| 6 | 1945 | Kerala Ayurveda Ltd. | 30 |
| 7 | 1960 | Nupa laboratories | 22 |
| 8 | 1975 | Oushadhi | 18 |
| 9 | 1987 | Kandamkulathy Oushahasala | 16 |
| 10 | 1988 | Pankajakasturi Herbals | 7 |
| 11 | 1989 | Nagarjuna Herbals | 19 |
| 12 | 1999 | Sreedhereyam | 23 |
| 13 | 2005 | Dhathri Herbals Ltd. | 11 |

*Source:* Kerala Ayurveda Medicine Manufacturers Association (KAMMA)

Here, the number of patent drugs varies from firm to firm; therefore, simple random sampling is not the appropriate method for selecting firms. Thus, the researcher again use Probability Proportional to Size (PPS) sampling through Lahiri's strategy for the determination of sample firms and three firms Arya Vaidya Sala, Oushadhi and Vaidyaratnam have been selected for the investigation.

In the third stage, district wise selection of consumers has been done through equal allocation of stratified sampling procedure. In the fourth and last stage, firm wise selection of consumer has been conducted through the proportional allocation of stratified sampling (Mukhopadhyay, 2014a) method. Here, the firm wise selection of consumers has been done in the proportion of their patent drugs offered by these firms i.e. 43: 18: 14 (43 patent drugs from Arya Vaidya Sala, 18 from Oushadhi and 14 from Vaidyaratnam).

At last, 450 consumers (86 consumers of Arya Vaidya Sala, 36 consumers of Oushadhi and 28 consumers of Vaidyaratnam from three districts) have been selected through purposive sampling.

## 5. Data Analysis and Interpretation

For the purpose of finding the factors influencing the consumers to use patent drugs, factor analysis has been carried out and multiple regression analysis has been used to measure the functional relationship between the variables. The relevant aspects of factors were framed on the basis of Robert Lauterborn (Lauterborn, 1990), 4 Cs of marketing. According to him, 4 Cs are the major factors related to 4 Ps (Product, Price, Place and Promotion) of consumers. The 4 Cs consist of Consumers Needs and Wants, Cost to the Consumers, Convenience for the Consumers and Communication. Here, 15 statements are analyzed, which were related to Consumers Needs and Wants, Cost to the Consumers, Convenience for the Consumers and Communication.

**Table 3: Descriptive Statistics**

| *Relevant Aspects of Factors* | *Mean* | *Std. Dev.* |
|---|---|---|
| Cost of the Patent drugs affordable to me. | 3.669 | 1.389 |
| Ayurveda firms charging reasonable price to patent drugs. | 3.671 | 1.436 |
| Ayurveda firms are keeping stabilization in price of patent drugs. | 3.420 | 1.492 |
| I got quality drugs at reasonable price. | 3.287 | 1.544 |
| Patented drugs are conveniently located from nearby places. | 3.191 | 1.578 |
| I am comfortable with usage of patent drugs. | 2.973 | 1.491 |
| I feel patent drugs are needed to the community. | 3.376 | 1.549 |
| I do feel the usage of patent drugs is better to my health. | 3.300 | 1.472 |
| I prefer to use patent drugs for my family. | 3.740 | 1.396 |
| Certain patent drugs are very effective to solve the body pain. | 3.264 | 1.483 |
| I feel it is necessary to cure allergy faced by the person. | 3.276 | 1.393 |
| I feel it is very usable to my family members. | 3.624 | 1.422 |
| Patent drugs are conveniently used in the polluted environment. | 3.173 | 1.609 |
| I used patent drugs through the suggestion of my friends. | 2.740 | 1.488 |
| I prefer to use patent drugs through doctor's communication. | 3.593 | 1.381 |

*Source:* Primary data

Table 3 consists of mean and standard deviation of prescribed factors related to consumer's needs and wants, cost, convenience and communication has reasonable mean values. It indicates that most of the respondents have given average weight on these factors.

**Table 4: KMO and Bartlett's Test**

| | | |
|---|---|---|
| Kaiser-Meyer-Olkin Measure of Sampling Adequacy. | | .761 |
| Bartlett's Test of Sphericity | Approx. Chi-Square | 2761.644 |
| | DF | 105 |
| | Sig. | .000 |

*Source:* Primary data

The result of table 4 obtained from 450 consumers had been thoroughly analyzed and the output of result has been clearly explained in this section. The Kaiser-Meyer-Olkin (KMO) value is .761, which is greater than 0.7 and Bartlett's Test is significant at 5 per cent level of significance. It indicates that the 15 variables related to various factor is suitable for factor analysis

**Table 5: Communalities**

| *Variables* | *Extraction* |
|---|---|
| Cost of the Patent drugs affordable to me. | 0.46 |
| Ayurveda firms charging reasonable price to patent drugs. | 0.67 |
| Ayurveda firms are keeping stabilization in price of patent drugs. | 0.56 |
| I got quality drugs at reasonable price. | 0.51 |
| Patented drugs are conveniently located from nearby places. | 0.91 |
| I am comfortable with usage of patent drugs. | 0.58 |
| I feel patent drugs are needed to the community. | 0.59 |
| I do feel the usage of patent drugs is better to my health. | 0.67 |
| I prefer to use patent drugs for my family. | 0.77 |
| Certain patent drugs are very effective to solve the body pain. | 0.67 |
| I feel it is necessary to cure allergy faced by the person. | 0.68 |
| I feel it is very usable to my family members. | 0.35 |
| Patent drugs are conveniently used in the polluted environment. | 0.83 |
| I used patent drugs through the suggestion of my friends. | 0.55 |
| I prefer to use patent drugs through doctor's communication. | 0.58 |

*Note:* Extraction Method: Principal Component Analysis.

*Source:* Primary data

Table 5 reveals that extraction communalities represent the relationship between the variables and all other variables before rotation. Here, all the extraction communalities are above 0.30. It shows the good relationship between the variables. Therefore, the 15 variables related to various factor forced the consumers to adopt patent drugs did not distort results.

The total variance explained in the table 6 shows how the variance is dividing the 15 variable factors. Here, the four factors have eigenvalues greater than 1, which is a common criterion for a factor. The first factor explains 29.570 per cent, second factor explains 16.107 per cent, third factor explains 9.378 per cent and fourth factor explains 7.405 per cent. So, the researcher needs to take only four factors for rotation.

**Table 6: Total Variance Explained**

| *Factors* | *Initial Eigenvalues* | | | *Extraction Sums of Squared Loadings* | | | *Rotation Sums of Squared Loadings* | | |
|---|---|---|---|---|---|---|---|---|---|
| | *Total* | *% of Variance* | *Cumulative %* | *Total* | *% of Variance* | *Cumulative %* | *Total* | *% of Variance* | *Cumulative %* |
| 1 | 4.435 | 29.570 | 29.570 | 4.435 | 29.570 | 29.570 | 3.520 | 23.464 | 23.464 |
| 2 | 2.416 | 16.107 | 45.677 | 2.416 | 16.107 | 45.677 | 2.466 | 16.442 | 39.906 |
| 3 | 1.407 | 9.378 | 55.055 | 1.407 | 9.378 | 55.055 | 2.232 | 14.881 | 54.787 |
| 4 | 1.111 | 7.405 | 62.460 | 1.111 | 7.405 | 62.460 | 1.151 | 7.673 | 62.460 |
| 5 | .884 | 5.893 | 68.353 | | | | | | |
| 6 | .869 | 5.791 | 74.145 | | | | | | |
| 7 | .727 | 4.844 | 78.988 | | | | | | |
| 8 | .648 | 4.319 | 83.307 | | | | | | |
| 9 | .565 | 3.764 | 87.072 | | | | | | |
| 10 | .480 | 3.200 | 90.272 | | | | | | |
| 11 | .443 | 2.953 | 93.225 | | | | | | |
| 12 | .400 | 2.667 | 95.891 | | | | | | |
| 13 | .307 | 2.044 | 97.935 | | | | | | |
| 14 | .199 | 1.324 | 99.259 | | | | | | |
| 15 | .111 | .741 | 100.000 | | | | | | |

Extraction Method: Principal Component Analysis.

*Source:* Primary data

**Table 7: Rotated Component Matrix**

| *Variables* | *Statements* | *Component* | | | | *Communality* |
|---|---|---|---|---|---|---|
| | | *Factor 1* | *Factor 2* | *Factor 3* | *Factor 4* | |
| Variable 1 | Cost of the Patent drugs affordable to me. | -0.109 | **0.668** | 0.031 | -0.051 | 0.461 |
| Variable 2 | Ayurveda firms charging reasonable price to patent drugs. | -0.002 | **0.817** | -0.038 | 0.044 | 0.67 |
| Variable 3 | Ayurveda firms are keeping stabilization in price of patent drugs. | -0.052 | **0.738** | 0.051 | 0.113 | 0.562 |
| Variable 4 | I got quality drugs at reasonable price. | -0.036 | **0.681** | -0.189 | -0.079 | 0.508 |
| Variable 5 | Patented drugs are conveniently located from nearby places. | 0.078 | 0.094 | **0.945** | -0.013 | 0.908 |
| Variable 6 | I am comfortable with usage of patent drugs. | 0.435 | -0.148 | **0.578** | 0.184 | 0.579 |
| Variable 7 | I feel patent drugs are needed to the community. | **0.466** | 0.36 | 0.463 | 0.158 | 0.585 |

*contd. table 7*

| *Variables* | *Statements* | *Component* | | | | *Communality* |
|---|---|---|---|---|---|---|
| | | *Factor 1* | *Factor 2* | *Factor 3* | *Factor 4* | |
| Variable 8 | I do feel the usage of patent drugs is better to my health. | **0.802** | 0.131 | 0.081 | -0.002 | 0.667 |
| Variable 9 | I prefer to use patent drugs for my family. | **0.857** | -0.012 | 0.177 | -0.018 | 0.767 |
| Variable 10 | Certain patent drugs are very effective to solve the body pain. | **0.785** | -0.126 | 0.196 | 0.041 | 0.672 |
| Variable 11 | I feel it is necessary to cure allergy faced by the person. | **0.809** | -0.124 | 0.09 | 0.009 | 0.679 |
| Variable 12 | I feel it is very usable to my family members. | **0.563** | -0.123 | 0.127 | 0.021 | 0.349 |
| Variable 13 | Patent drugs are conveniently used in the polluted environment. | 0.349 | -0.274 | **0.793** | -0.063 | 0.83 |
| Variable 14 | I used patent drugs through the suggestion of my friends. | 0.012 | 0.135 | -0.122 | **-0.72** | 0.551 |
| Variable 15 | I prefer to use patent drugs through doctor's communication. | 0.055 | 0.168 | -0.075 | **0.738** | 0.581 |
| Eigenvalues | | 4.435 | 2.416 | 1.407 | 1.111 | |
| Percentage of variation | | 29.57 | 16.107 | 9.378 | 7.405 | |

*Note:* Extraction Method: Principal Component Analysis. Rotation Method: Varimax with Kaiser Normalization.

*Source:* Primary data

From the rotated component matrix, the first four eigenvalues (4.435, 2.416, 1.407 and 1.111) of rotation matrix of 15 variables are taken, which suggest a factor solution with four factors is presented in Table 7. The factor loadings are estimated by principle component factor analysis method. In the first factor, the 7$^{th}$, 8$^{th}$, 9$^{th}$, 10$^{th}$, 11$^{th}$ and 12$^{th}$ variables have heavy loadings with an eigenvalues of 4.435 which has 29.570 per cent of variation. This factor is called consumers needs and wants. The second factor, 1$^{st}$, 2$^{nd}$, 3$^{rd}$ and 4$^{th}$ variables have high loading with an eigenvalues of 2.416 which has 16.107 per cent of variation and it is termed as cost to the consumers. The third factor, 5$^{th}$, 6th and 13$^{th}$ variables have high loading with an eigenvalues of 1.407 which explains 9.378 per cent of variation. This factor is labeled as convenience for the consumers. In factor 4$^{th}$, 14$^{th}$ and 15$^{th}$ variables have high loading with an eigenvalues of 1.111 which has 7.405 per cent of variation and it is labeled as communication for the consumers. The total variance explained by the four factors together is approximately 62.460 per cent.

## 6. Results and Discussion

At this stage, it is essential to test the four factors which were identified through factor analysis have any relationship between their usage of patent drugs. The regression analysis was conducted to establish the relationship between the four variables and consumer usage of patent drugs. For statistical analysis, the normality of residuals and constant variance of residuals are two important assumptions of regression analysis. Therefore, the shape of Histogram/PP plot for normality of residuals (Figure 1 to 2) and

Scatter plot for constant variance of residuals (Figure 3 to 6) are showed in the appendix. The usage of patent drugs is related with how long they have been using such drugs. The usages is ranged like less than 2 years, 2-4 years, 4-6 years, 6-8 years and above 8 years are identified through the structured questionnaire.

**Table 8: Model Summary of Regression Analysis**

| *Model* | *R* | *R Square* | *Adjusted R Square* | *Std. Error of the Estimate* | *Durbin-Watson* |
|---|---|---|---|---|---|
| Regression | .761[a] | 0.579 | 0.575 | 0.971 | 1.152 |

*Note:* 'a' Predictors: (Constant), Communication from Others, Convenience for the Consumer, Cost to Consumers, Consumers Needs and Wants

*Source:* Primary data

Table 8 shows the model summary which expresses the relationship between dependent variables and independent variables (predictors). In this situation, usage of patent drug is dependent variable and consumer's needs and wants, cost to consumers, convenience for the consumer and communication from others are independent variables. The model summary 'R' expresses the simple correlation between the independent variables i.e. predictors. Here, the R value is .761 which indicates that there is high degree of correlation between the variables. The R square value represents how much of the total variation in usage of patent drugs (dependent) can be explained by the independent variables like consumers needs and wants, cost to consumers, convenience for the consumer and communication from others. In this situation, 57.9 per cent of variation can be explained with the help of independent variables. The Durbin-Watson statistic shows the value 1.152, which indicate that there is positive auto correlation between the variables.

**Table 9: ANOVA through Dependent and Independent Variables**

| *ANOVA*[b] | | | | | | |
|---|---|---|---|---|---|---|
| *Model* | | *Sum of Squares* | *DF* | *Mean Square* | *F* | *Sig.* |
| 1 | Regression | 577.919 | 4 | 144.48 | 153.167 | .000[a] |
| | Residual | 419.761 | 445 | 0.943 | | |
| | Total | 997.68 | 449 | | | |

*Notes:* 1. 'a' Predictors: (Constant), Communication from Others, Convenience for the Consumer, Cost to Consumers and Consumers Needs and Wants.

2. 'b' Dependent Variable: How long have you been using this drug (Usage of Patent Drugs)

*Source:* Primary data

Table 9 shows that the independent variables statistically significantly predict the dependent variable, F (4, 445) = 153.167, p (.000) < .05 i.e., the regression model is a good fit of the data. Thus we can assume that there is an association between the various factors and consumers usage of patent drugs.

**Table 10: Coefficients between Dependent and Independent Variables**

Coefficients[a]

| *Model* | | *Unstandardized Coefficients* | | *Standardized Coefficients* | | | *Collinearity Statistics* | |
|---|---|---|---|---|---|---|---|---|
| | | *B* | *Std. Error* | *Beta* | *t* | *Sig.* | *Tolerance* | *VIF* |
| 1 | (Constant) | **2.973** | 0.346 | | 8.592 | .000 | | |
| | Consumers Needs and Wants | **1.649** | 0.412 | 0.435 | 4.002 | .000 | .381 | 4.415 |
| | Cost to Consumers | **-1.221** | 0.137 | -0.148 | -8.912 | .000 | .473 | 3.551 |
| | Convenience for the Consumer | **2.861** | 0.421 | 0.578 | 6.795 | .000 | .651 | 3.448 |
| | Communication from Others | **1.275** | 0.321 | 0.184 | 3.971 | .000 | .575 | 5.708 |

*Note:* 'a' Dependent Variable: How long have you been using drug (Usage of drugs)
*Source:* Primary data

Table 10 shows that the usage of drugs increases for increase in consumer needs and wants, convenience for the consumer and communication from others. The drug or medicine usage increases when there is decrease in cost. The p-value of B coefficient is less than .05. So the coefficients are statistically significant.

The regression equation of these variables are constructed as:

Y= 2.973 +1 .649 (Consumers Needs and Wants) - 1.221 (Cost to Consumers) + 2.861 (Convenience for Consumers) + 1.275 (Communication from others)

The equation is constructed with the help of dependent and independent variables. Here, Y represents usage of patent drugs. The regression analysis suggests that the factors consumers needs and wants, convenience, communication are positively related with the usage of drugs and the cost is negatively associated with usage of patent drugs. Finally, the researcher concludes that there is a significant relationship between various factors and usage of patent drugs.

## 7. Conclusion

After the consciousness of different advantages, the investigation followed what are the variables compelled the consumers to buy the patent medications made by the firm. The outcomes demonstrate that consumer's needs and wants, convenience, communication from others are directly related with the utilization of medications and the cost to the consumers is adversely connected with the use of patent medications. It is further found that there is a huge connection between variables that forced the consumers to buy patent drugs and its usage of patent medications.

The consumer's utilizations of patent medications were improved mostly in the past two years. It is a positive sign to the makers to focus on Ayurveda patent. In the current scenario, the general consumers acknowledge the quality of patent prescriptions alongside traditional medicines. It gives

some quick reliefs to buyers for relieving their illnesses. Similarly, the consumers of patent medicine are not completely satisfied with reasonableness of price of patent medicines.

The reformulation regime happened in India provided wide benefits to use IPRs provision especially patent in Ayurveda industry. In the initial period, political and economic condition prevailed in India did not support patents, but later it has improved. Unfortunately, the obstructive behaviour is still prevailing in the Ayurveda sector of Kerala. It will demoralize the Ayurveda enterprises in Kerala. Patent meds explore the opportunities in Ayurveda, if the pharmaceutical companies of Kerala could take proper patent, it will create a paradigm shift in the Ayurvedic treatment of Kerala. Therefore, the administration finds a way to expel the challenges faced by the Ayurveda business in Kerala.

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## Appendix

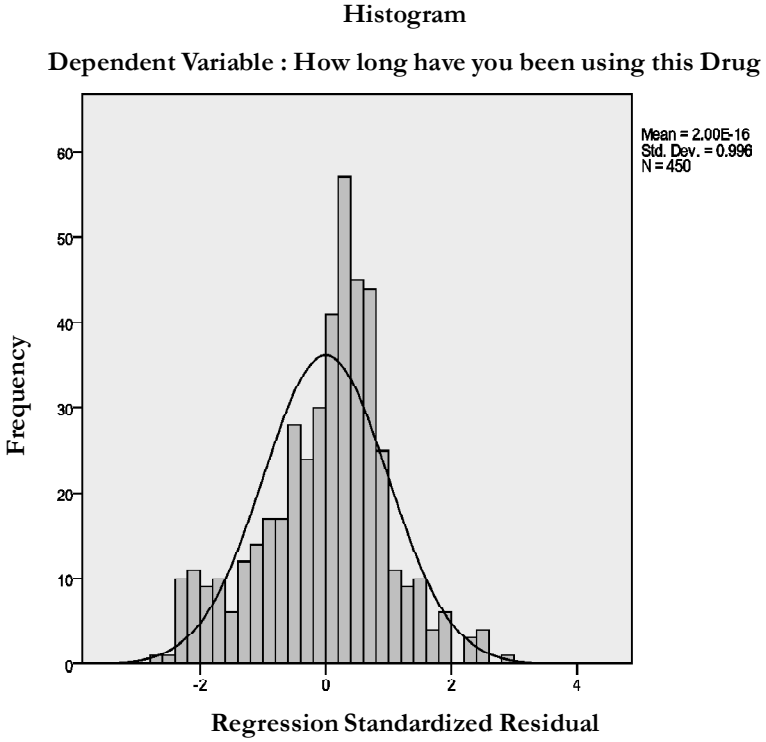



Figure 1

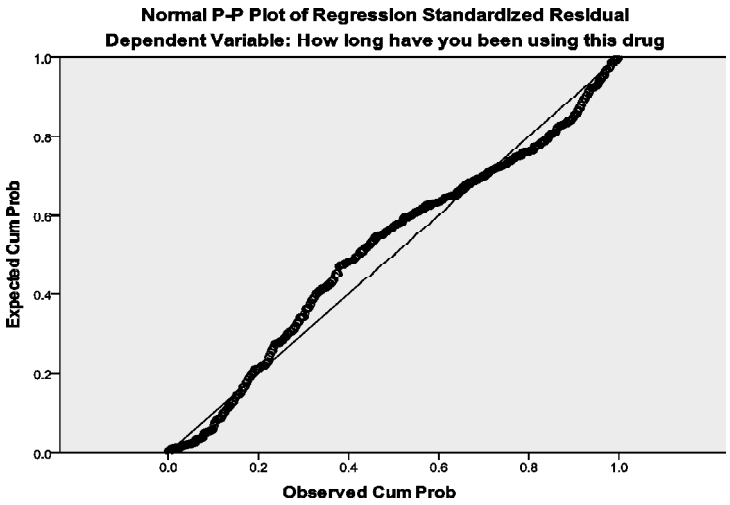



Figure 2

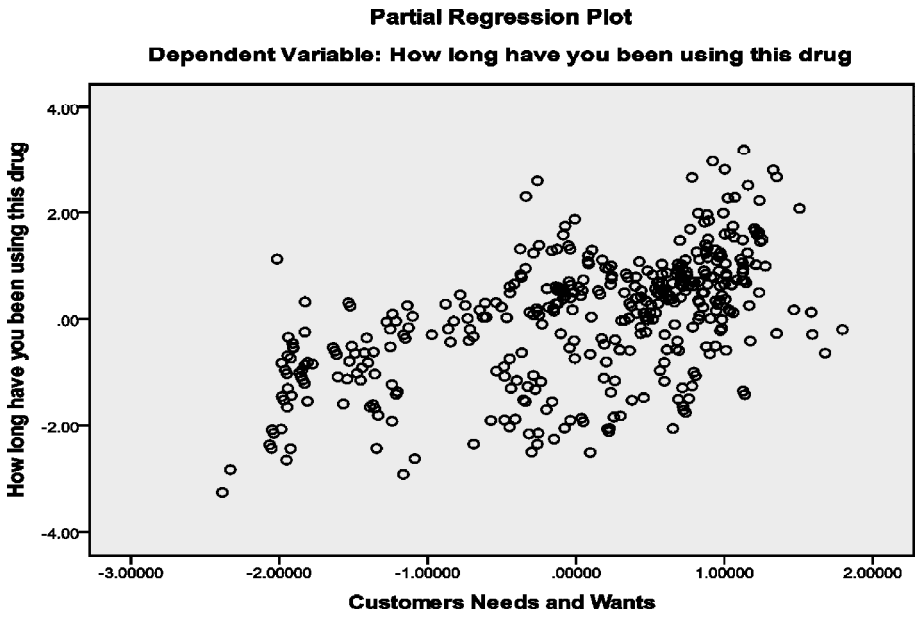
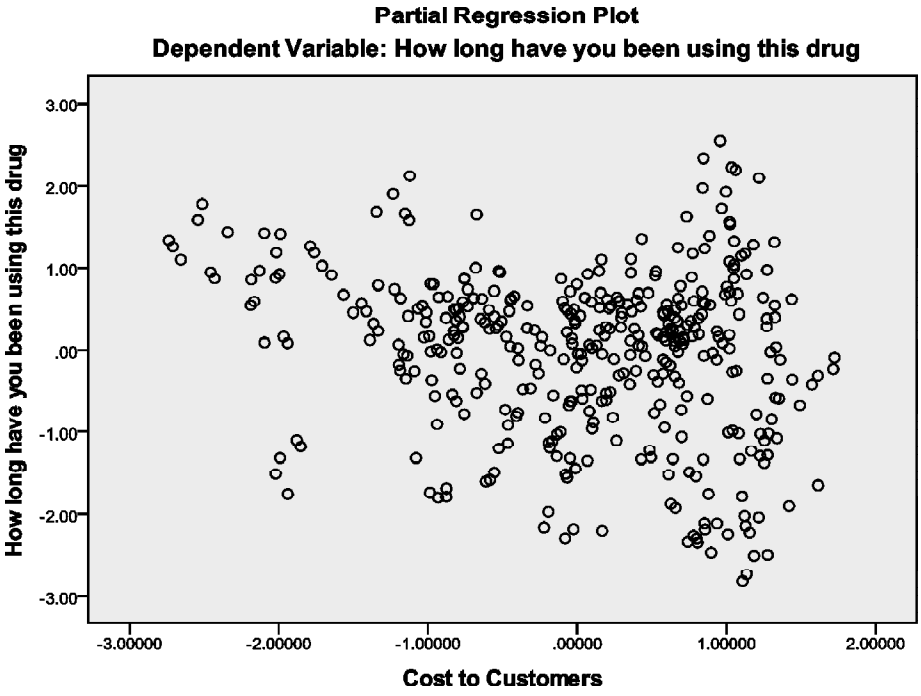



**Figure 3**

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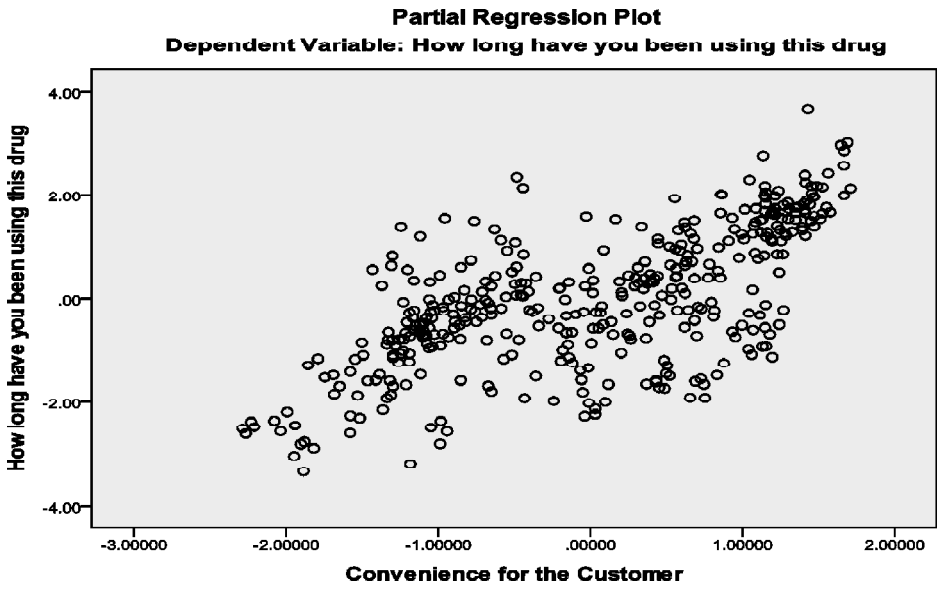


**Figure 5**

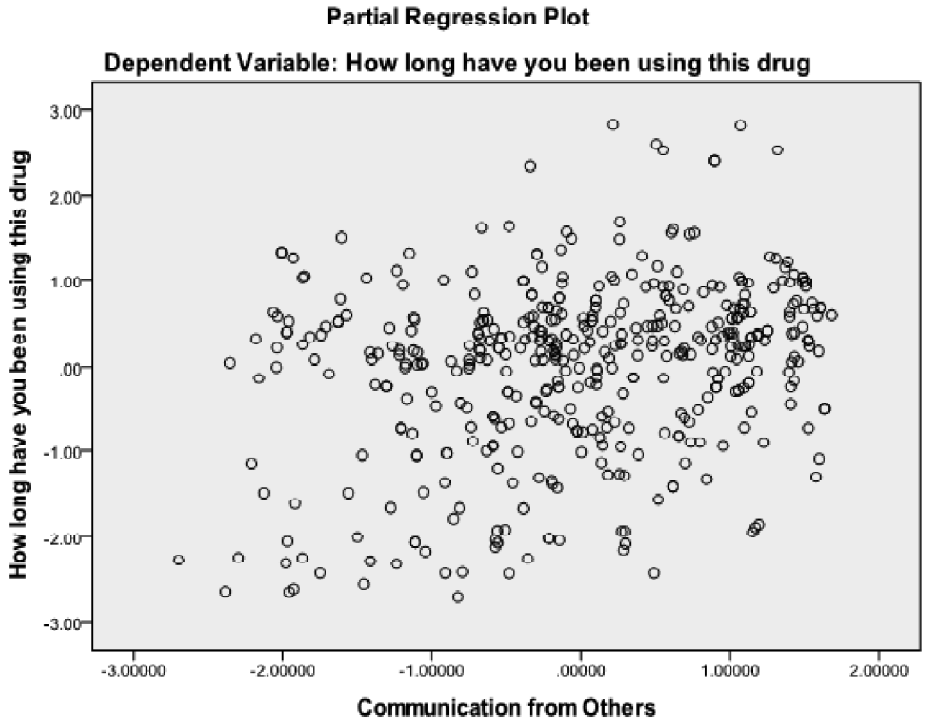


**Figure 6**