

Original Research Article

Antecedents of Purchase Intention towards herbal products: An Emerging Market Study

Abstract

The purpose of this paper to examines awareness and attitude of consumers towards herbal products and factors affecting the adoption of herbal products. To achieve the objectives of the study, using simple random sampling a sample of 301 respondents was taken during January-March 2020. Primary data were collected electronically with the help of a pre-structured, non-disguised questionnaire. For analyzing the data, techniques such as tests for difference of means, Analysis of Variance (ANOVA), Factor Analysis, etc. were used. Factor analysis was used to reduce the data so as to have a better understanding and analysis. The results of the study indicate that the majority of the respondents were aware of herbal products for more than 5 years. The most important attribute while making purchase consideration of herbal products was safety followed by quality. The most prevalent problem related to herbal products was price followed by false claims. Majority of the respondents reported internet as their source of information regarding herbal products. Respondents were willing to recommend herbal products to others. Therefore, adoption of herbal products is likely to increase in the future. The findings from regression analysis reveal that purchase intention of herbal products was positively influenced by functionality and quality as well as traditional appeal of the herbal products. The respondents reported considerable intent to recommend the herbal products to friends and relatives. This means word of mouth has important role in adoption of these products.

Keywords- Herbal Products, Purchase Intention, Adoption, Awareness, Factors.

1. Introduction

India is the rich in herbs and biodiversity. But there are wide variations in the quality of raw materials as well as a shortage of various medicinal plants and herbs because they are becoming endangered or there is lower production due to factors such as inappropriate management of the resources or wastage of the local resources. (Anonymous, 2018). Many well-known brands like

body shop, forest essentials, Himalaya, Patanjali etc. are using efficient technologies to provide their customers with varieties of herbal products. There are need to develop cost effective products through technological innovations according to the customers' needs. (Bera and Malik, 2019).

A number of studies have been conducted to study consumer adoption and attitude towards herbal products. A very few studies have explored adoption and attitude towards herbal products. Also, the problems related to herbal products have been rarely examined. This study aimed to bridge these research gaps with aimed to study the awareness and attitude of consumers towards herbal products in Ludhiana City beside study also explore the factors affecting the adoption of herbal products.

2. Review of Literatures

Abdullah and Salleh (2010) identified consumers' inclinations and perspectives on issues regarding health and natural resources in using herbs and herbal product. The study found that factor impinging on consumers' inclinations such as product commercialization, preferences, media influences, and job opportunities have positive impacts.

Crawford and Leventis (2005) found that different perspectives about the quality and information presented to the consumers are controversial in marketing. Arya *et al* (2012) found the advertisements had affirmative impact on consumers. Thanisorn *et al* (2012) investigated that marketing mix was the key factor influencing Thai consumers' perception on facial herbal cosmetic products. Huda and Sultan (2013) found the marketing mix elements relating to herbal skin care products have an impact on the buying motives of generation Y in Bangladesh and this relationship is mediated by consumer values in herbal skin care products. Awad and Al-Shaye (2014) highlighted that there has been a global rise in the use of natural health products (NHPs) Suleiman (2014) found that public awareness regarding the use of herbal medicines and supplements, especially alongside other medication, is lacking. Virani (2014) identified a retail chain of perfumes and cosmetics stores, to use its competitive advantage and effectively apply right communications and segmentations strategies towards organic cosmetics range. Ali and Yadav (2015) found that herbal market is flooded with numerous well-known and recognized herbal brands. Ismail and Mokhtar (2015) examined that attitude, social influence, product safety, and culture belief also influenced buying intention. Pujari *et al* (2015) found that that most of the people are using herbal products and also had strong belief in herbal medication.

Rekha and Gokila (2015) advocated that the Indian market is getting enlarged and many players are coming out with cosmetic products especially skin care products for women and men. Bedi (2016) highlighted that the industry has a plethora of herbal cosmetic brands like Forest Essentials, Biotique, Himalaya, Soul Flower, Body shoppe, and many more are adding to the list. Naresh and Reddy (2016) focused on factors influencing customer perception on herbal product. Rajarajan and Birundha (2016) examined how the beauty of a person gives perceptual experience of pleasure or satisfaction. Sundari and Janaki (2016) revealed that most of the respondents are aware of the Himalaya skin care products. Srinivasan (2016) examined the differentiation strategy of Himalaya and sets out the challenges it faced or would face in sustaining its focused differentiation strategy. Vasuhi and Rani (2016) revealed that cosmetics and toiletries are not just the domain of women more body sprays, perfumes and other cosmetics and toiletries with rising demand from men; the Indian market is receiving enlarged. Joshi (2017) argued that consumer behavior encompasses a vast area including consumption pattern, consumer preferences, consumer motivation, and consumer buying process and shopping behavior. Kalyani *et al* (2017) found that majority of the people who use cosmetics are unaware of the fact that make-up can harbor a variety of infections and that preference towards organic cosmetics is inevitable in the current scenario. Rani (2017) argued that the Indian herbal market is flooded with many well-known and recognized herbal brands. Reazai *et al* (2017) found that perceived benefits which influence consumer intention to purchase natural functional foods. Bulsara and Yadav (2018) highlighted that advancement in ayurveda through structured manufacturing system. Krishnamurthy (2018) focused on how a FMCG company in India is handling its sales and distribution management strategies. Lin *et al* (2018) explored consumer attitudes toward green cosmetics. Sujatha and Amala (2018) shows that when the consumer buy, in how much quality they buy depends on their perception, self-concept, social and culture background. Brijesh and Soni (2019) found quality and natural products are the two main things that influence customers to buy herbal products in Kerala. Padmasani and Ishwarya (2019) intended to explore the consumption behavior and satisfaction level of young women consumers towards herbal cosmetics in Coimbatore city.

3. Materials and Method

Descriptive research was carried out for meeting the objectives of the study. The study was carried out to assess the consumer awareness and attitude towards herbal products and to study

the factors affecting the adoption of herbal products. Population for the study consisted of postgraduate students enrolled in various colleges of Ludhiana city. A list of Postgraduate students of various colleges was prepared and using simple random sampling more than 600 students were contacted and the questionnaire was sent electronically (using e-mail and WhatsApp) to them. A total of 403 students filled the questionnaire and out of these 301 usable responses were obtained. Thus, for the purpose of study, the sample size was 301 postgraduate students. Primary data was collected with the help of a pre-structured non disguised questionnaire. Respondents were asked close ended questions, multiple choice and scale based questions. For scale based questions, the respondents were asked to provide the responses on a five-point Likert scale (5 strongly agree to 1 strongly disagree).

The questions were pre-tested and suitable modifications were made before finalizing the questionnaire. For analyzing the data, techniques such as comparison of means, Analysis of Variance (ANOVA) Factor analysis, Correlation and Multiple regressions were used.

4. Results and Discussion

Table 1: Profile of Respondent (n=301)

Demographic Variables	Category	Frequency
Gender	Male	89 (29.60)
	Female	212 (70.40)
Family Occupation	Business	158 (52.50)
	Service	143 (47.50)
Background	Urban	239 (79.40)
	Rural	62 (20.60)
Annual Household Income	Rs. 2.5 Lacs or Less	35 (11.60)
	Rs. 2.5 Lacs-5.0 Lacs	97 (32.20)
	Rs. 5.0 Lacs-10.0 Lacs	114 (37.90)
	Rs. 10 Lacs or above	55 (18.30)
Age	Mean (SD)	22.71 (2.08)

(Figures in parenthesis indicate percentages)

Table 2: Awareness of herbal products (n=301)

Duration	Frequency
Less than 1 year	22 (7.30)
1-3 years	93 (30.90)

3-5 years	86 (28.60)
More than 5 years	100 (33.20)

(Figures in parenthesis indicate percentages)

It can be seen from table 5 that the majority of the respondents i.e. 33.20 percent have been aware of herbal products for more than 5 years.

Table 3: Source of information of herbal products

Source	Frequency
Internet	212
Relative/Friends	188
TV	145
Newspaper & Magazines	125
Doctor	99
Retailers	64

(Multiple responses were allowed)

It can be seen from table 6 that Internet was the number one source of information regarding herbal products with the maximum number of respondents i.e. 212 respondents having internet as their source of information regarding herbal products. This finding is in tune of the study conducted by Awad and Al-Shaye (2014) and Dzeparoski, and Trajkovic-Jolevska (2018) according to which family members and/or friends and mass media were the main sources for providing information about Natural Health Products.

Table 4: Use frequency of herbal products (n=301)

Product	Mean	Std. Deviation	t-value (p-value)
Herbal Cosmetics and Skincare	3.75	0.99	13.08 (<.0001)
Herbal Medicines	2.72	1.14	-4.23 (<.0001)
Herbal Supplements	2.53	1.14	-7.00 (<.0001)

It can be seen from table 8 Herbal Cosmetics and Skincare products were the most regularly used herbal products with mean score of 3.75 followed by Herbal Medicines with mean score of 2.72.

Table 5: Attributes considered for purchase consideration of herbal products (n=301)

Attributes	Mean	Std. Deviation	t-value (p-value)
Safety	4.48	0.79	32.44 (<.0001)
Quality	4.40	0.79	30.59 (<.0001)
Functionality	4.16	0.91	22.12 (<.0001)
Traditional Knowledge Based Trust	4.01	0.92	19.08 (<.0001)

Traditional Appeal	3.95	0.90	18.21 (<.0001)
Brand Image	3.94	0.89	18.20 (<.0001)
Price	3.79	1.00	13.77 (<.0001)

It can be clearly seen from the table 9 that the most important attributes for respondents while making a purchase consideration for an herbal product are Safety and Quality of the herbal product since they have the highest mean scores of 4.48 and 4.40 respectively. Factor analysis was used to extract the important factors. The results of factor analysis presented in the table 10

Table 6: Values for KMO Measure and Bartlett's Test

Measure	VALUE
Kaiser-Meyer-Olkin Measure of Sampling Adequacy	0.762
Bartlett's Test of Sphericity (Chi-Square)	554.666
Degree of Freedom	10
Significance	<0.0001

Value of chi-square for Bartlett's Test of Sphericity came out to be 554.666. This value was found to be significant ($p < 0.0001$) with 10 degrees of freedom.

Table 7: Rotated Component Matrix: Factor Analysis

Variables	Component	
	1	2
Safety	0.772	
Traditional Appeal		0.948
Functionality	0.872	
Quality	0.875	
Traditional Knowledge Based Trust		0.641

Factor definitions for the extracted factors have been provided as follows.

4.1 Functionality and Quality: This factor deals with the functional and the quality characteristics of herbal products that is acceptable to the customers. This factor explained 57.111 percent of variance in the data. Primarily, this factor represents the information about the safety, functionality and the quality of herbal products.

4.2 Traditional Appeal: This factor deals with the traditional appeal of the herbal products. This factor explained 19.431 percent of variance in the data. Primarily, this factor represents the information about the traditional appeal and the Traditional Knowledge Based Trust that the customers have on herbal products.

Table 8: Factors Extracted

Factor	Factor Name	Percentage of Variance	Items	Item Loading
1.	Functionality and Quality	57.111	Safety	0.772
			Functionality	0.872
			Quality	0.875
2.	Traditional Appeal	19.431	Traditional Appeal	0.948
			Traditional Knowledge Based Trust	0.641

4.3 Preference towards herbal products

The respondents were asked to rate their preference for herbal or non-herbal with regard to various products. Table 13 shows the response for the product preference they had. The data was rated on a 5-point scale ranging from 5 to 1, where '5' represented 'High preference towards herbal' and '1' represented 'High preference towards non-herbal'. The finding is also supported in previous studies such as Rajarajan and Birundha (2016) as according them the demand of herbal medicines is increasing rapidly due to their skin friendliness and lack of side effects. The finding is also supported by Lin *et al* (2018) according to which majority of respondents viewed price and performance as the most important factors when choosing green cosmetics

Table 9: Preference towards herbal products (n=301)

Products	Mean	Std. Deviation	t-value (p-value)
Face Wash	4.00	1.05	16.68 (<.0001)
Hair Oil	3.84	1.19	12.26 (<.0001)
Soap	3.84	1.10	13.26 (<.0001)
Face Pack	3.79	1.14	12.03 (<.0001)
Toothpaste	3.79	1.16	11.88 (<.0001)
Shampoo	3.75	1.12	11.62 (<.0001)
Face Mask	3.71	1.20	10.28 (<.0001)
Body Lotion	3.59	1.16	8.78 (<.0001)
Cold Cream	3.37	1.18	5.51 (<.0001)
Hair Conditioner	3.35	1.18	5.25 (<.0001)

The responses obtained from the respondents are represented in table 13. Table 13 reveals that majority of the respondents preferred to use herbal face wash with the highest mean score of 4.00 (1.05) followed by hair oil with mean score of 3.84 (1.19). Therefore, face wash, hair oil and soap are the preferred herbal products. Preference for using herbal cold cream and herbal hair conditioner was relatively low with mean scores of 3.37 (1.18) and 3.35 (1.18) respectively. In general, for the listed product categories herbal products are preferred over non herbal products.

4.4 Problems and opinion related to herbal products

The respondents were enquired about how often they have faced certain problems and issues while purchasing or using the herbal products. They were asked to respond on a 5-point scale from 1 to 5 with '1' representing 'Never' and '5' representing 'Always'. Results based on the responses have been shown in the table 10.

Table 10: Problems related to herbal products (n=301)

Issue	Mean	Std. Deviation	t-value (p-value)
High Price	2.59	1.13	-6.22 (<.0001)
False Claims	2.38	1.03	-10.30 (<.0001)
Unpalatable Odour/Taste	2.36	1.03	-10.66 (<.0001)
Poor Functionality	2.35	0.94	-11.81 (<.0001)
Counterfeit Product	2.28	1.09	-11.38 (<.0001)
Lack of Authenticity	2.28	1.00	-12.29 (<.0001)
Poor Availability	2.27	1.02	-12.21 (<.0001)
Poor Quality	2.23	0.95	-13.89 (<.0001)
Trust	2.23	1.02	-12.99 (<.0001)

From the above table it can be seen that High Price was the most prevalent issue related to herbal products with the highest mean score of 2.59 (1.13) followed by False Claims with mean score of 2.38 (1.03). The finding is supported by the study conducted by Naresh and Reddy (2016) according to which the herbal products available in the market are costly but have no side effects.

Table 11: Opinion of respondents regarding herbal products (n=301)

Statements	Mean	Std. Deviation	t-value (p-value)
I believe it is a good idea to use herbal products(A1)	4.36	0.78	30.05 (<.0001)
I have favourable attitude towards herbal products(A2)	4.23	0.83	25.64 (<.0001)
Herbal Products are useful for me(A3)	4.11	0.87	21.94 (<.0001)
I believe using herbal products is desirable(A4)	3.96	0.92	18.09 (<.0001)
Attitude Score	4.23	0.74	28.95 (<.0001)
Using herbal products is easy for me(B1)	3.89	0.95	16.23 (<.0001)
I feel that using herbal products will improve my health(B2)	3.96	0.95	17.38 (<.0001)
I believe that using herbal products will not cause any side effects(B3)	3.90	1.00	15.59 (<.0001)
Behavioural Belief Score	3.91	0.82	19.21(<.0001)
People who influence my behaviour think I should use herbal products(S1)	3.64	1.08	10.33 (<.0001)
People who are important to me think I should use herbal products(S2)	3.65	1.09	10.42 (<.0001)

The people in my life whose opinions I value approve my decision to use herbal products(S3)	3.71	1.04	11.79 (<.0001)
It is expected of me to use herbal products(S4)	3.59	1.15	8.92 (<.0001)
Social Pressure Score	3.65	0.94	11.91 (<.0001)
My family thinks I should use herbal products(N1)	3.61	1.16	9.12 (<.0001)
My close friends think I should use herbal products(N2)	3.41	1.20	5.99 (<.0001)
My classmates think I should use herbal products(N3)	3.23	1.24	3.24 (.0013)
Normative Belief Score	3.41	1.11	6.54 (<.0001)
For me to use herbal products in future is possible(P1)	3.91	1.00	15.77 (<.0001)
If I wanted to I could use herbal products(P2)	4.03	0.95	18.82 (<.0001)
It is mostly up to me whether I should use herbal products or not(P3)	4.37	0.82	28.89 (<.0001)
I am confident that I can use herbal products(P4)	4.05	0.96	19.03 (<.0001)
Perceived Behavioural Control Score	4.09	0.76	24.81 (<.0001)
Using herbal products enhances my confidence(C1)	3.52	1.09	8.32 (<.0001)
I get confused while choosing herbal products(C2)	3.40	1.28	5.44 (<.0001)
I have doubts about the efficacy of herbal products(C3)	3.35	1.22	4.99 (<.0001)
Control Belief Score	2.92	0.73	-1.79 (0.07)
I intend to use herbal products in time to come(I1)	3.86	0.96	15.44 (<.0001)
I want to use herbal products(I2)	3.95	1.00	16.47 (<.0001)
I will try to use herbal products(I3)	3.97	0.99	17.09 (<.0001)
Purchase Intention Score	3.92	0.88	18.12 (<.0001)

The respondents were also having a favorable attitude towards herbal products. For each respondent average of statements from A1 to A4 was calculated and overall attitude score thus obtained is presented in the table. It can be seen from the table that mean value of attitude score comes out to be 4.23. Respondents also believed that using herbal products will improve their health as the mean score of the statement B2 came out to be 3.96. For each respondent average of statements from B1 to B3 was calculated and overall behavioral belief score thus obtained is presented in the table 11.

Table 12: Comparison of opinion of respondents regarding herbal products on the basis of annual household income

Variables	Less than Rs. 2.5 Lacs (n=35) Mean (SD)	Rs. 2.5 Lacs-5.0 Lacs (n=97) Mean (SD)	Rs. 5.0 Lacs-10.0 Lacs (n=114) Mean (SD)	Above Rs. 10 Lacs (n=55) Mean (SD)	F-value (p-value)
Attitude Score	4.17 (0.83)	4.19 (0.71)	4.33 (0.59)	4.15 (0.97)	0.98 (0.399)

Behavioural Belief Score	3.87 (0.82)	3.84 (0.86)	4.00 (0.74)	3.90 (0.92)	0.73 (0.534)
Social Pressure Score	3.74 (0.99)	3.59 (0.96)	3.74 (0.87)	3.50 (1.03)	1.01 (0.385)
Normative Belief Score	3.57 (1.05)	3.33 (1.10)	3.57 (1.09)	3.16 (1.15)	2.10 (0.100)
Perceived Behavioural Control Score	3.99 (0.79)	4.00 (0.83)	4.23 (0.62)	4.05 (0.87)	1.97 (0.117)
Control Belief Score	2.92 (0.62)	2.84 (0.76)	2.95 (0.68)	3.01 (0.84)	0.70 (0.547)
Purchase Intention Score	3.90 (0.88)	3.78 (0.99)	4.09 (0.69)	3.86 (1.01)	2.33 (0.073)

The mean Social Pressure score for income group of “Less than Rs 2.5 Lacs” was 3.74 with standard deviation of 0.99. For income group “Rs 2.5 Lacs to 5.0 Lacs”, the mean Social Pressure score was 3.59 with standard deviation 0.96, for income group “Rs 5.0 Lacs to 10.0 Lacs” mean Social Pressure score was 3.74 with standard deviation 0.87 and for income group with income “Above Rs 10 Lacs” mean Social Pressure score was found to be 3.50 with standard deviation 1.03. Calculated F-value was 1.01 with p-value 0.385 which was not significant at 5 percent level. Therefore, there was no significant variation in the responses across the income categories in terms of Social Pressure score.

The mean Perceived Behavioural Control score for Male was 4.20 with standard deviation of 0.69. For Female it was 4.05 with standard deviation 0.79. Calculated t-value was 1.71 with p-value 0.956 which was not significant at 5 percent level. Therefore, there was no significant variation in the responses across the gender categories in terms of Perceived Behavioural Control score.

Table 13: Comparison of opinion of respondents regarding herbal products on the basis of Gender

Variables	Male (n=89) Mean (SD)	Female (n=212) Mean (SD)	t-value
Attitude Score	4.31 (0.76)	4.20 (0.73)	1.14
Behavioural Belief Score	4.01 (0.87)	3.88 (0.80)	1.20

Social Pressure Score	3.69 (0.95)	3.63 (0.94)	0.49
Normative Belief Score	3.37 (1.11)	3.43 (1.11)	-0.45
Perceived Behavioural Control Score	4.20 (0.69)	4.05 (0.79)	1.71
Control Belief Score	3.06 (0.87)	2.86 (0.66)	1.92
Purchase Intention Score	4.01 (0.91)	3.89 (0.87)	1.02

The mean Control Belief score for Male was 3.06 with standard deviation of 0.87. For Female it was 2.86 with standard deviation 0.66. Calculated t-value was 1.92 with p-value 0.972 which was not significant at 5 percent level. Therefore, there was no significant variation in the responses across the gender categories in terms of Control Belief score.

Table 14: Comparison of opinion of respondents regarding herbal products on the basis of Family Occupation

Variables	Business (n=158) Mean (SD)	Service (n=143) Mean (SD)	t-value (p-value)
Attitude Score	4.23 (0.68)	4.23 (0.79)	-0.007 (0.497)
Behavioural Belief Score	3.96 (0.74)	3.86 (0.90)	-1.02 (0.153)
Social Pressure Score	3.67 (0.90)	3.62 (0.99)	-0.42 (0.336)
Normative Belief Score	3.41 (1.05)	3.42 (1.17)	0.10 (0.540)
Perceived Behavioural Control Score	4.16 (0.71)	4.02 (0.81)	-1.52 (0.064)
Control Belief Score	2.93 (0.72)	2.90 (0.75)	-0.37 (0.353)
Purchase Intention Score	3.99 (0.80)	3.85(0.96)	-1.35 (0.088)

The mean Control Belief score for Business Category was 2.93 with standard deviation of 0.72. For Service Category, it was 2.90 with standard deviation 0.75. Calculated t-value was -0.37 with p-value 0.353 which was not significant at 5 percent level. Therefore, there was no significant variation in the responses across the occupation categories in terms of Control Belief score.

Table 15: Comparison of opinion of respondents regarding herbal products on the basis of Background

Variables	Urban (n=239) Mean (SD)	Rural (n=62) Mean (SD)	t-value (p-value)
Attitude Score	4.21 (0.76)	4.32 (0.63)	-1.19 (0.117)
Behavioural Belief Score	3.89 (0.86)	4.02 (0.66)	-1.27 (0.102)

Social Pressure Score	3.62 (0.96)	3.77(0.88)	-1.15 (0.124)
Normative Belief Score	3.38 (1.15)	3.55 (0.94)	-1.19 (0.116)
Perceived Behavioural Control Score	4.07 (0.77)	4.16 (0.72)	-0.86 (0.193)
Control Belief Score	2.90 (0.73)	3.00 (0.75)	-0.96 (0.169)
Purchase Intention Score	3.92 (0.90)	3.94 (0.81)	-0.18 (0.428)

The mean Normative Belief score for Urban Category was 3.38 with standard deviation of 1.15. For Rural Category, it was 3.55 with standard deviation 0.94. Calculated t-value was -1.19 with p-value 0.116 which was not significant at 5 percent level. Therefore, there was no significant variation in the responses across the background categories in terms of Normative Belief score.

4.5 Correlation Analysis

Correlation analysis was undertaken to highlight the relation between various variables of the study.

Table 16: Correlation Analysis

Variables	Correlation Coefficient	p-value
Satisfaction Level and Age	0.160	0.0051
Recommendation to others and Age	0.176	0.005
Recommendation to others and Satisfaction Level	0.618	<.0001
Attitude Score and Satisfaction Level	0.590	<.0001
Attitude Score and Recommendation to others	0.591	<.0001
Behavioural Belief Score and Recommendation to others	0.517	<.0001
Behavioural Belief Score and Attitude Score	0.731	<.0001
Social Pressure Score and Age	0.012	0.825
Social Pressure Score and Behavioural Belief Score	0.699	<.0001
Purchase Intention Score and Age	0.149	0.009
Purchase Intention Score and Attitude Score	0.703	<.0001

It can be seen from table 16 that satisfaction level and Age had the correlation with correlation coefficient of 0.160 and p-value 0.0051. Recommendation to Others and Satisfaction level had the correlation with correlation coefficient of 0.618 and p-value less than 0.0001 which is significant. Social Pressure Score and Behavioral Belief Score had the correlation with the correlation coefficient of 0.699 and p-value less than 0.0001 which is significant. Purchase

Intention Score and Attitude Score had the correlation with the correlation coefficient of 0.703 and p-value less than 0.0001 which is significant.

4.6 Overall satisfaction level and recommending herbal products to others

The respondents were also asked whether they will recommend herbal products to others as well. They were asked to respond on a 5-point scale with '5' representing 'definitely recommend' and '1' representing 'definitely not recommended'.

Table 17: Satisfaction Level (n=301)

Variable	Mean	Std. Deviation	t-value (p-value)
Overall Satisfaction	3.81	0.67	21.14 (<.0001)
Recommendation to others	3.97	0.81	20.67 (<.0001)

Mean score in terms of overall satisfaction was found to be 3.81 with standard deviation of 0.67. Mean score in terms of recommending herbal products to others was found to be 3.97 with standard deviation of 0.81. Calculated mean score was compared against the midpoint of the scale, i.e. 3.

4.7 Factors affecting the adoption of herbal products

Regression analysis was used for finding out factors affecting adoption of herbal products. The dependent variable for regression analysis was Purchase Intention Score which was taken from table 15. Independent variables used for running regression included 'Functionality and Quality' and 'Traditional Appeal' taken as factor score from table 18. Other independent variables included 'Gender', 'Background' and 'Age'. For this analysis intention score has been used as a proxy variable for adoption of herbal products and results of regression analysis are presented in table 18.

Table 18: Regression Model

Parameter	Beta (Standard Error)	t-value	p-value
Intercept	3.047 (0.505)	6.032	<0.0001
Functionality and Quality	0.349 (0.045)	7.787	<0.0001
Traditional Appeal	0.278 (0.044)	6.242	<0.0001

Gender	0.003 (0.104)	0.029	0.976
Family Occupation	-0.211 (0.089)	-2.366	0.019
Background	0.012 (0.115)	0.107	0.915
Age	0.054 (0.022)	2.448	0.015
Annual Household Income	-0.021 (0.051)	-0.407	0.684
R Square	0.276		

For ‘Gender’, ‘Background’ and ‘Annual Household Income’ the calculated p-value was 0.976, 0.925 and 0.684 respectively which was not significant at 5 percent level. Therefore, ‘Gender’, ‘Background’, and ‘Annual Household Income’ did not have significant effect on intention to adopt herbal products. From the above table it can be seen that the value of R Square came out to be 0.276.

5. Conclusion

The present study examines valuable insights into assessment of consumer adoption and attitude towards herbal products. A number of important dimensions have emerged from the findings of the study and these are discussed.

Firstly, internet, relative or friends and TV were the more common sources of information of herbal products for the respondents as compared to doctor and retailers. Secondly, herbal cosmetics are having more use frequency as compared to herbal supplements and herbal medicines. Thirdly, even though majority of the respondents have been aware of herbal products for more than 5 years but majority of them have been using herbal products for 1 to 3 years. Therefore, firms selling herbal products need to improve their sales and promotion strategies to enhance customer adoption of herbal products. Fourthly, safety is the most important and quality the second most important attribute when it comes to purchase consideration for herbal products by the respondents. Therefore, companies must focus more on the safety and quality aspect of herbal products. Fifthly, the most prevalent issue related to herbal products is that of high price. Therefore, companies need to give special attention to the pricing of the herbal products. Lastly, the respondents reported considerable intent to recommend the herbal products to friends and relatives. This means word of mouth has important role in adoption of these products.

References

Abdullah N and Salleh S (2010) “Factors related to the use of herbal products and derivatives from consumers’ perspective in Kota, Kinabalu, Sabah: An initial study”. *Sosiohumanika*, 3 (1):143-154.

- Agarwal S (2018) Indian consumers pick natural products over 'chemicals'. Retrieved on 30 January 2020 from <https://www.livemint.com/Leisure/KBxc79Pa5C1KiutQAUOkuK/Indianconsumers-pick-natural-products-over-chemicals.html?facet=amp>
- Ajzen I and Fishbein M (1980) "Understanding attitudes and predicting social behavior". *Englewood Cliffs, NJ: Prentice Hall*, pp. 249-259.
- Ali M and Yadav M (2015) "A study of consumer perception of herbal products in Bhopal (with special reference to Vindhya Herbal Products)". *International Journal of Management Studies*, 2 (1): 69-80.
- Anonymous (2018) Indian ayurvedic industry to grow to \$ 4.4 billion by the end of this year. Retrieved on 30 January 2020 from <https://economictimes.indiatimes.com/industry/healthcare/biotech/healthcare/indian-ayurvedic-industry-to-grow-to-4-4-billion-by-the-end-of-this-year/articleshow/66694089.cms?from=mdr>
- Arya V, Thakur R, Kumar S and Kumar S (2012) "Consumer buying behavior towards Ayurvedic medicines or products in Joginder Nagar a survey". *Ayurpharm International Journal of Ayurveda and Allied Sciences*, 1 (3): 60-64.
- Awad A and Al-Shaye D (2014) "Public awareness, patterns of use and attitude towards natural health products in Kuwait: a cross-sectional survey". *BMC Complementary and Alternative Medicine*, 14:1-11. <https://doi.org/10.1186/1472-6882-14-105>
- Bedi, M (2016) "Consumers' preferences for herbal beauty products". *The Research Journal*, 2 (6): 27-35.
- Bera, D and Malik, G (2019) "Study on Herbal Cosmetic Products". *CASS Studie*, 3(1): 388-409.
- Brijesh, S. and Soni, V. (2019) "Generation Y consumer perception of Patanjali products in Kerala". *International Journal of Innovative Technology and Exploring Engineering*, Vol. 8 No. (11), pp. 266-270.
- Bulsara, H. and Yadav, N. (2018) "A study on the current scenario of consumer buying behavior towards Ayurvedic medicines in Gujarat". *IOSR Journal of Business and Management*. 31-35. <https://doi.org/10.35940/ijitee.k1318.0981119>
- Chatterjee, B. and Pancholi J (2011) "Prakriti-based medicine a step towards personalized medicine". *AYU Journal*, 32(2): 141-146. doi: 10.4103/0974-8520.92539
- Crawford, S.Y. and Leventis, C. (2005), "Herbal product claims: boundaries of marketing and science", *Journal of Consumer Marketing*, 22 (7): 432-436. <https://doi.org/10.1108/07363760510631183>
- Dragan, A and Petrescu (2013) "Consumer behavior towards organic, natural and conventional skin care products a pilot study". *Advances in Environmental Sciences International Journal of the Bioflux Society*, 5(3): 274-286. https://www.academia.edu/8178349/The_Taxonomy_of_Negation_in_Plotinus
- Dzeparoski, M. and Trajkovic-Jolevska, S. (2018), "Impact of regulation on advertising and promotion of traditional herbal medicines and food supplements", *International Journal*

- of *Pharmaceutical and Healthcare Marketing*, 12 (1): 77-90.
<https://doi.org/10.1108/IJPHM-10-2016-0055>
- Huda, M. and Sultan, P (2013) "Buying motives of herbal skin care products: The case of generation Y in Bangladesh". *International Review of Business Research Papers*, 9 (5): 68-80.
- Ismail, S. and Mokhtar, S (2015) The antecedents of herbal product actual purchase in Malaysia. *Management Science Letters*, 5 (8): 771-780. <http://dx.doi.org/10.5267/j.msl.2015.5.011>
- Joshi G (2017) "Study on consumer awareness, attitude and preference towards herbal products with reference to Patanjali". *International Journal of Business and Management Invention*, 6 (10): 46-50. [https://www.ijbmi.org/papers/Vol\(6\)10/Version-1/10610014650.pdf](https://www.ijbmi.org/papers/Vol(6)10/Version-1/10610014650.pdf)
- Kalyani, Vishnupriya and Gayathri R (2017) Knowledge, attitude and perception towards organic based cosmetic formulation in the multicultural, civilized society a survey. *International Journal of Pharmaceutical Sciences Review and Research*, 4 (2): 21-24. <https://globalresearchonline.net/journalcontents/v42-2/05.pdf>
- Krishnamurthy, R (2018) Naturo products sales and distribution management. *Emerald Emerging Markets Case Studies*, 8 (4):1-15 <https://doi.org/10.1108/EEMCS-06-2017-0111>
- Kotler, P. Armstrong, G, Saunders J and Wong, V. (1999) *Principles of Marketing*, pp. 260. Prentice Hall Inc. <http://library.wbi.ac.id/repository/212.pdf>
- Lin, Y. Yang S, Hanifah H and Iqbal Q (2018) "An exploratory study of consumer attitude towards green cosmetics in the UK Market". *Administrative Sciences*, 8(4):1-14. <https://doi.org/10.3390/admsci8040071>
- Majumdar, S. and Swain, S (2015) "Identification and analysis of factors influencing preferences for green products a study in and around Kolkata (India)". *International Journal of Business Quantitative Economics and Applied Management Research*, 1 (9): 36-49.
- Naresh, B. and Reddy, D (2016) Impact of perception on consumer purchase behaviour of Herbal Product in India. *Paripex Indian Journal of Research*, 5 (6): 233-235.
- Padmasani and Ishwarya M (2019) Women consumers' satisfaction towards herbal cosmetics with reference to Coimbatore city. *The International Journal of Analytical and Experimental Modal Analysis*, 4 (11): 2315-2319.
- Pandey, S. Meshya, N. and Viral D (2010) "Herbs play an important role in the field of cosmetics". *International Journal of PharmTech Research*, 2(1): 632-639 <http://sphinxsai.com/sphinxsai>
- Pujari, N. Sachan, A and Gupta D (2015) "Indian consumer's buying behaviour and perception to herbal drugs a report". *International Journal of Progressive Pharmacy*, 1(1): 11-20.
- Rajarajan, M. and Birundha G (2016) "Consumer buying behaviour towards herbal cosmetic products in India an overview". *International Journal of World Research*, Vol.1 No. (4), pp. 36-46 <https://dokumen.tips/documents/consumer-buying-behaviour-towards-buying-behaviour-towards-herbal-cosmetic-products.html>

- Rani, N. (2017) "Consumer awareness, attitude and preference towards Patanjali retail products". *International Journal of Trend in Scientific Research and Development*, 2, (1): 690-697. <https://doi.org/10.31142/ijtsrd7081>
- Rekha, M. and Gokila, K. (2015) "A study on consumer awareness, attitude and preference towards herbal cosmetic products with special reference to Coimbatore city". *International Journal of Interdisciplinary and Multidisciplinary Studies*, 2 (4): 96-100. <http://www.ijims.com/uploads/365ba7a88ce2a984969bkgoki12.pdf>
- Rezai, G., Teng, P.K., Shamsudin, M.N., Mohamed, Z. and Stanton, J.L. (2017), "Effect of perceptual differences on consumer purchase intention of natural functional food", *Journal of Agribusiness in Developing and Emerging Economies*, 7(2): 153-173. <https://doi.org/10.1108/JADEE-02-2015-0014>
- Sharma, A. Shanker C, Tyagi L, Singh M and Rao CV (2008) "Herbal medicine for market potential in India an overview". *Academic Journal of Plant Sciences*, 1(2): 26-36 [https://www.idosi.org/ajps/1\(2\)08/2.pdf](https://www.idosi.org/ajps/1(2)08/2.pdf)
- Singh H and Rachna (2017) A study of consumer attitude towards organic products. *International Journal of Advanced Research in Computer Science and Management Studies*, 5:116-119 [http://dx.doi.org/10.1016/S2212-5671\(15\)01219-8](http://dx.doi.org/10.1016/S2212-5671(15)01219-8)
- Srinivasan, R. (2016) Himalaya: head-to-heel herbal healthcare. *Emerald Emerging Markets Case Studies*, 6 (3): 1-29. <https://doi.org/10.1108/EEMCS-06-2015-0137>
- Sujatha, K and Amala, S. (2018) "A study on consumer satisfaction towards Himalaya skincare products in Tiruchirapalli town". *International Journal for Research in Engineering Application and Management*, 4 (9): 590-592 <http://ijream.org/papers/IJREAMV04I0945138.pdf>
- Suleiman A (2014) "Attitudes and beliefs of consumers of herbal medicines in Riyadh, Saudi Arabia". *Journal of Community Medicine and Health Education*, 4(9): 1-6 doi: 10.4172/2161-0711.1000269
- Sundari K and Janaki R (2016) "A study on consumer preference towards Himalaya skin care products in Tirupur city". *Intercontinental Journal of Marketing Research Review*, 2 (4): 23-29 <http://ijream.org/papers/IJREAMV04I0945138.pdf>
- Syed Mohamed A (2004) "Factors influencing intention to consume herbal supplement". University Sains Malaysia. (MBA Thesis), pp. 1-34 http://eprints.usm.my/25776/1/FACTORS_INFLUENCING_INTENTION_TO_CONSUME_HERBAL_SUPPLEMENT.pdf
- Thanisorn R, Byaporn N, Chanchai B (2012) "Thai consumers' perception on herbal cosmetic products: a comparative study of Thai and imported products". *Information Management and Business Review*, 4 (1): 35-40. <https://pdfs.semanticscholar.org/bc69/60fdf50cb878fa9ef0d908c0163b265483ce.pdf>
- Vasuhi, M. and Rani, K. (2016) "A study on consumer awareness, attitude and preference towards herbal cosmetic products (with special reference to Udumalpet Taluk)".

International Journal of Interdisciplinary Research in Arts and Humanities, 2, (4): 1:64-66 <http://www.ijims.com/uploads/365ba7a88ce2a984969bkgoki12.pdf>

Virani, S. (2014) Herbal (Organic) cosmetics the way ahead in modern India. *International Journal of Trade and Commerce*, 3(1): 182-194
[https://sgsrjournals.co.in/paperdownload/\(17\)_pp\(182-194\).pdf](https://sgsrjournals.co.in/paperdownload/(17)_pp(182-194).pdf)

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