

COMPARATIVE STUDY ON NATURAL AND CHEMICAL SKIN CARE PRODUCTS: A SERQUAL APPROACH (GAP 5)

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ABSTRACT

The purpose of the study was to examine the differences between expectation and perception of natural and chemical skin care products. It assess the service quality under five dimensions namely reliability, responsiveness, assurance, empathy and tangibles. The study was carried out in Vellore city, Tamil Nadu. A sample of 100 consumers was surveyed among which 50 are chemical cosmetic consumers and 50 are natural cosmetic consumers. The data was collected by using purposive sampling technique. A standard questionnaire was framed comprising Gap 5 of SERQUAL dimension. The study found that there exist minimum gap on natural skin care products and maximum gap on chemical skin care products between expectation and perception of service. In addition, the perceived service of natural skin care products is better than chemical skin care products.

Keywords: Natural and chemical skin care products, expectation, perception, SERQUAL approach (Gap 5).

I. INTRODUCTION

In the last decade, consumers have become more enlightened on environmental issues. The people are changed from chemical products to natural products because its contained chemical ingredients. Moreover, some of these chemicals have been linked in animal studies to various health issues. It often hypes the dangers of common ingredients in skin care which gives effect for other companies to produce safe and effective products. Majority of the consumers considered natural skin care products as a best one to use to save them from side effects and harmful diseases faced due to chemical skin care products. But, still the users of chemical products are satisfied and continued to use the same irrespective of their side effects. This may due to the quick results obtained by the consumers and economically support them to buy the products. Hence, the study has been undertaken to find out the gap exists between the expectation and perception of consumers between chemical and natural skin care products at Vellore city, Tamilnadu.

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II. SIGNIFICANCE OF THE STUDY

The study aims to understand the expectation and perception of consumers towards natural and chemical skin care products. It also helps in identifying the gap between the expected and perceived service quality of natural and skin care products. It supports in examining the significant association between the consumers' demographic factors and their expectations and perception towards natural and skin care products. Moreover, the study has explored the differences between the perceived service of natural and chemical skin care products which helps in understanding of satisfaction and preference of consumers either to natural or chemical skin care products.

III. LITERATURE REVIEW

Strength of Natural Products

Nair and Pillai (2007) found that male consumers generally prefer to purchase and make the brand selection of cosmetics individually. Quality is the major factor influencing the purchase decision of male consumers. They tend to buy cosmetic items from a single shop of their convenience. It is also observed that male consumers buy all their cosmetic items from one shop. **Matic and Puh** (2016) determined which variables influence consumers' intentions towards purchase of natural cosmetics. Several variables are included in the regression analysis such as age, gender, purchase tendency towards organic food, new natural cosmetics brands and consumers' tendency towards health consciousness. The study concluded that the consumers have concerns about their consumption and tend to prefer organic and natural products. **Anute et al.** (2015) studied consumer buying behavior towards cosmetic products in Pune city. The study found that most of the people prefer to use domestic brand based on organic cosmetic product.

Weakness of Natural Products

Stehlin (1991) explored natural cosmetics contain plant derived materials benefit to microbial growth and only a few traditional preservatives or no preservatives at all, so they usually have short shelf-life. The products are always having higher price. 87.1% of respondents insist that the chemical based cosmetic is cheaper than the natural cosmetic

Strength of Chemical Products

According to **Stehlin** (1991) chemical based products contain preservatives which could hinder the growth of microbial, so they would have a longer shelf life than the natural ones. **Elsner and Maibach** (2005) stated that the variety of materials which have been incorporated in chemical products is staggering including vitamins, antioxidants, minerals, herbs, hormones, anti-inflammatory, mood influencing fragrances (aroma therapy), placenta, amniotic fluid, etc. The antioxidant is a kind of oxidation retarders

which prevent skin becoming senile; nevertheless, vitamin E is a potent sensitizer which could cause both delayed allergic contact dermatitis and immediate hives (Stehlin, 1991).

Weakness of Chemical Products

Stehlin (1991) studied that the chemical products could not take effects on allergic or irritation problems. It depends on the people who use the cosmetic product that caused the reaction and any other products that have the offending ingredient.

IV. OBJECTIVES OF THE STUDY

1. To examine the level of expectation and perception of the respondents towards natural and chemical skin care products.
2. To measure the gap between desired and actual level of service quality offered by natural and chemical skin care products.
3. To identify the differences in perceived service quality offered by natural and chemical skin care products

V. RESEARCH METHODOLOGY

This study examined the service gap between consumer expectations and perception towards natural and chemical skin care products at Vellore district, Tamil Nadu. To identify the service gap, Gap five model of service quality was taken in to consideration. The study is analytical in nature. The target population of this study consists of consumer of natural and chemical skin care products at Vellore district, Tamil Nadu. The sample size was 100 consumers among which 50 are chemical cosmetic consumers and 50 are natural cosmetic consumers. Purposive sampling technique has been used to collect data from the consumers. The data was collected by using primary and secondary data source. The questionnaire consists of consumers' demographic factors and their expectations and perception towards natural and chemical skin care products. The questionnaire was developed by using a five point Likert scale. The statistical tools namely reliability, descriptive, chi-square and paired sample t-test were used.

VI. HYPOTHESES

H₁₁: There is an association between demographic factors and consumers' expectation and perception towards natural and chemical skin care products.

H₁₂: There is a significant difference between consumers' perception towards natural and chemical skin care products.

VII. ANALYSIS AND INTERPRETATION

Table-1: Reliability Test

S. No.	Scale	Natural Products		Chemical Products	
		No. of Items	Cronbach's Alpha (α)	No. of Items	Cronbach's Alpha (α)
I	Consumers' expectations towards natural and chemical skin care products				
	Reliability	5	0.945	5	0.911
	Responsiveness	5	0.914	5	0.900
	Assurance	5	0.899	5	0.878
	Empathy	5	0.881	5	0.906
II	Consumers' perception towards natural and chemical skin care products				
	Reliability	5	0.965	5	0.901
	Responsiveness	5	0.934	5	0.925
	Assurance	5	0.908	5	0.933
	Empathy	5	0.961	5	0.921
	Tangibles	5	0.917	5	0.949

It is learnt from the above table that, Cronbach's Alpha for all the factors was above 80% which means that the variables produce consistent results if measurements are made repeatedly.

Table-2: Descriptive Statistics

S. No.	Variables	Natural Products		Chemical Products	
		Mean	Standard Deviation	Mean	Standard Deviation
I	Consumers' expectations towards natural and chemical skin care products				
	Reliability	4.82	0.600	4.71	0.623
	Responsiveness	4.46	0.619	4.34	0.685
	Assurance	4.43	0.666	4.58	0.712
	Empathy	4.28	0.671	4.51	0.671
II	Consumers' perception towards natural and chemical skin care products				
	Reliability	3.96	0.971	3.01	1.128
	Responsiveness	3.74	1.112	3.10	1.126
	Assurance	3.81	1.064	3.12	1.117
	Empathy	3.68	1.028	3.18	1.121
	Tangibles	3.77	0.968	3.59	0.988

From the above table, the mean value of SERQUAL factors is more than 4.00 which means that the consumers have high expectations towards natural and chemical skin care products. Based on mean value, reliability is considered as a highly expected factor regarding natural (4.82) and chemical (4.71) skin care products.

The mean value of SERQUAL factors for natural skin care products is above 3.70 which means that the consumers have moderate and above moderate level of perception towards natural skin care products. In addition, the mean value of SERQUAL factors for chemical skin care products is below 3.50 which mean that the consumers have moderate and low level of perception towards chemical skin care products. Based

on the mean value reliability (3.96) and assurance (3.81) is considered as a minimally satisfied factor regarding natural skin care products and tangibles (3.59) is considered as a minimally satisfied factor regarding chemical skin care products.

Table-3: Chi-Square

Demographic Factors	Expectations			Perception		
	Chi-Square Value	P value	Conclusion	Chi-Square Value	P value	Conclusion
Natural Skin Care Products						
Gender	26.836	0.002	Accepted at 1% level	46.667	0.011	Accepted at 5% level
Age	17.594	0.031	Accepted at 5% level	25.431	0.007	Accepted at 1% level
Marital status	23.517	0.008	Accepted at 1% level	20.278	0.019	Accepted at 5% level
Chemical Skin Care Products						
Gender	25.834	0.010	Accepted at 1% level	21.776	0.001	Accepted at 1% level
Age	31.289	0.006	Accepted at 1% level	36.017	0.033	Accepted at 5% level
Marital status	26.509	0.005	Accepted at 1% level	27.443	0.016	Accepted at 5% level

H_{01} : There is no association between demographic factors and consumers' expectations and perception towards natural and chemical skin care products.

The P value is less than 0.01 and 0.05, the alternate hypothesis is accepted at 1 per cent and 5 per cent level of significance. Hence it is concluded that there is an association between consumer's demographic variable with their expectations and perception towards natural and chemical skin care products.

Table-4.a: Paired Sample Test

Factors	Mean	SD	Correlation
Average of consumer perception towards natural skin care products	3.80	1.029	0.566
Average of consumer perception towards chemical skin care products	3.20	1.096	

Table-4.b

Factor	Paired Differences			t-test	P value
	Mean	SD	95% Confidence Interval of the Difference		
			Lower		

Natural and chemical skin care products	0.106	0.097	0.094	0.118	17.295	0.001
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H_{02} : There is no significant difference between consumers' perception towards natural and chemical skin care products.

It is inferred from the above tables, that there is a statistically significant difference between the mean score of natural ($M = 3.80$, $SD = 1.029$) and chemical ($M = 3.20$, $SD = 1.096$) skin care products. The P value is less than 0.01, hence the null hypothesis is rejected at 1 per cent level of significance. Hence it is concluded that there is a significant difference between consumers' perception towards natural and chemical skin care products. The mean score differences of consumers' perception towards natural and chemical skin care products is 10.63 per cent with a 95% confidence interval ranging from 9.4% to 11.8%.

Calculation of Eta

In order to assess the strength of association between consumers' perception towards natural and chemical skin care products, Eta is calculated.

$$\text{Eta squared} = \frac{t^2}{t^2 + N - 1} = 0.829$$

The Eta squared statistics value is 0.829 (> 0.14) which indicates the difference between consumers' perception towards natural and chemical skin care products has a large effect size. Hence, it is concluded that the consumers of natural skin care products have higher satisfaction than chemical skin care products.

VIII. FINDINGS

The study found that, from the mean and standard deviation, the perceived service quality is very low when compared with the expected service quality of natural and chemical skin care products. But natural skin care products satisfy more than the chemical skin care products. From the chi-square it has been proven that the demographic factors have a significant association with consumers' expectations and perception towards natural and chemical skin care products. From the paired sample test, it is vibrant that there is a large gap exists between consumers' perception towards natural and chemical skin care products.

IX. SUGGESTIONS

There is a large gap between expected and perceived service quality of chemical skin care products than the natural skin care products. Hence, it is advised for the companies to mix the ingredients which are less harmful and supports even to a sensitive skin. It is proven that there is a association between consumer's demographic factors with their expectations and perception of natural and chemical skin care products. Thus, it is recommended for the both the companies to produce the products which satisfies gender and all age people. It is also found that there is a huge service gap exists between the consumer

perception towards natural and chemical skin care products. Therefore, to enhance the satisfaction of the customers, it is recommended for the companies to modify the product attributes of chemical skin care to cope up with natural skin care products.

X. CONCLUSION

Chemical skin care products are usually made up of various chemicals which may be harmful and causes skin allergies, irritations and side effects. It would not support and favor the people who possess sensitive skin. But, natural skin care products are made from non-artificial ingredients like natural oils, plants (like seaweed, green tea), fruit extracts and fruit acids. These products are known to effectively treat the skin and nourish it. Most natural products have powerful antioxidants that assist in slowing down the aging process and creating a younger looking skin. Thus, the study concludes that natural skin care products are more user-friendly than chemical skin care products. The study has made various suggestions to improve the quality and satisfaction of consumers towards chemical skin care products and to keep their consumer's skin healthy and vibrant.

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