



Factors affecting for changing consumer behavior from milk blended tea to go for green tea in NCR region: A factor analysis approach

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Abstract

This paper tries to focus on Motivational factors responsible for the consumer behavioral changes in consuming green tea in Greater Noida region. This research study tries to analyze the factors, which are responsible for behavioral changes in traditional milk based tea drinking to go for green tea. Analyzed factors will suggests changes in the attitude in consumption behavior of tea drinker from milk added tea (normal milk blended tea), in Indian terms (*chaai*) as a habit of morning and evening energy booster to change in green tea. Separate shelves for green tea as daily need product in retail area are showing future trends of changing the taste of NCR tea-drinking population. Young members from Noida (students) are taken in the study for understanding how the old aged concept of boiled milk added tea got suppressed day by day and green tea has taken shelves in Indian habit cabinets. To analyze the data in questionnaire SPSS is used with Factor analysis technique for generating variables responsible for changes in customer preferences.

Keywords: green tea, factor analysis, changing behavior, motivational research.

Introduction

Green tea, also known as unoxidized tea, is made solely from the leaves of the *Camellia Sinensis* plant. The leaves are plucked, slightly withered, then immediately cooked to preserve the green quality and prevent oxidization (www.artoftea.com). Definition of tea “a widely cultivated shrub (*Camellia sinensis* of the family Theaceae, the tea family) native to China, northern India, and southeastern Asia and having glossy green leaves and fragrant white flowers” (<https://www.merriam-webster.com/dictionary/tea>). Intervention with green tea is thought to help prevent the accumulation of stress, and to be a potential therapeutic strategy for a healthy life (Unno, k *et al.* 2017) ^[3]. While North Americans call it tea and Russians call it a chai, it *Camellia sinensis* in both places and everywhere in between (<http://www.tealeafjournal.com/scientific-name.html>). Legend has it that the first cup of tea was brewed in 2737 B.C. when dried leaves landed in a boiling cup of water served to the Chinese Emperor Shen Nung. From China, the idea of “tea” spread throughout the world (<http://www.brynmawr.edu/chemistry/Chem/mnerzsto/Marshall-Tea.html>). According to (world atlas. com) Based on UN Food and Agriculture Organization statistics for global production from 1993-2013, 3 – Kenya (303,308 tonnes), 2 – India (900,094 tonnes), 1 – China (1,000,130 tonnes). Historical records indicate the prevalence of tea drinking in India since 750 BC. In the 16th century, a vegetable dish was also being prepared using tea leaves with garlic and oil. However, the credit for rediscovering tea and cultivating it at a commercial level goes to the British (<https://www.teacoffeespiceofindia.com/tea/tea-origin>). India has been exporting approximately 200 mcg of the beverage per year for over 50 years and we have not been

able to increase the quantity, mainly because of our own domestic demand (Ramaswamy, 2016) ^[8]. The introduction suggests scientific name, origin, health issues and export of India but multiple fold increase in consumption of tea drinkers India. According to Indian tea association (Source: Tea Board) Indian tea export is in 2017 January –august is Rs. Cr.2806.96.

B. Literature Review

The golden age of tea occurred during the Tang Dynasty (A.D. 618–906) as cultivation and trading routes expanded outside of China (Yin Shi & Schlegel, 2012) ^[11]. In India, the Tea Board, Coffee Board, Spices Board, and Coconut Development Board have developed guidelines for production and certification, and have encouraged the production and export of organic produce and products (Mitra & Devi, 2016) ^[12]. Green tea catechins have proved to be very versatile in providing health benefits. This means that there are potential health benefits for everyone in the consumption of green tea. Even moderate amounts of consumption (drinking 1–2 cups of tea per day) may have benefits (Reygaert, 2017) ^[13]. Tea is one of the most popular and lowest cost beverages in the world and has become the second-most consumed liquid (after water) (Marx, Haunschild, Bornmann, 2017) ^[14]. Literature review suggests about long old history of tea introduction in society and its respective usages. Indian tea board is also suggesting guidelines for tea production and encouragement. Research projected in introduction and literature review clearly suggests a business and society theme for the origin of

tea, the importance of national income, emphasis on cultivation and societal cost effective product.

C. Research Objectives

1. What are the factors responsible for motivating green tea consumption in NCR region?
2. What are the various tests can be conducted and suggested to industries for better understanding of market potential?

D. Research Methodology

1. **Research design:** Exploratory Research is used for problem audit and simple cross-sectional design
2. **Sample framework:** a college campus.
3. **Sampling element:** students.
4. **Sample size:** 200.
5. **Sampling technique:** Non probability sampling - Judgmental sampling.
6. **Sample location:** Noida (ncr)region
7. **Sampling time:** October 2017
8. **Scale used:** non comparative scale-itemized scale-Likert scale.
9. **Scale description:** 1= strongly agree, 2=agree, 3=undecided, 4=disagree, 5=strongly agree.
10. **Statistical method:** Factor analysis and varimax rotation.
11. **Experimental Location:** classroom with air conditioners in on mode.
12. **Experimental Instrument:** questionnaire and a short video to respondents are shown for a briefing on green tea as a product for nullifying the errors in understanding the product as research.
13. **Experimental time:** 40 minutes.

14. **Data collection sources:** primary and secondary sources both are used but extensive use for understanding the subject is external-published material-computer databases.

15. **Control measures:** observational technique is used in filling the questionnaire, the questionnaire is clearly explained in detail to respondents and advised not to talk while filling the questionnaire, external noises are controlled in the setting: switching off the mobile phone are strictly advised, discussions and consultations are restricted.

16. **Supervision measures:** student volunteers are advised to stand and help the respondent in managing the seating area in class and maintaining decorum for research.

E. Data Interpretation and Analysis

Table 1

KMO and Bartlett's Test		
Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.575
Bartlett's Test of Sphericity	Approx. Chi-Square	2049.127
	df	300
	Sig.	.000

KMO Test is displaying the results for interpreting the adequacy of data for factor analysis. The range is above (0.45) that is (0.575) this suggests value received in computation provides a valid justification that most of the values are above (0.50). Variables used in motivational research are presenting acceptable MSA level. This proves all variables are significant.

P value of Bartlett's test is (.000) less than (0.05) so factor analysis can further conduct and next steps for analysis are to be taken for further computations.

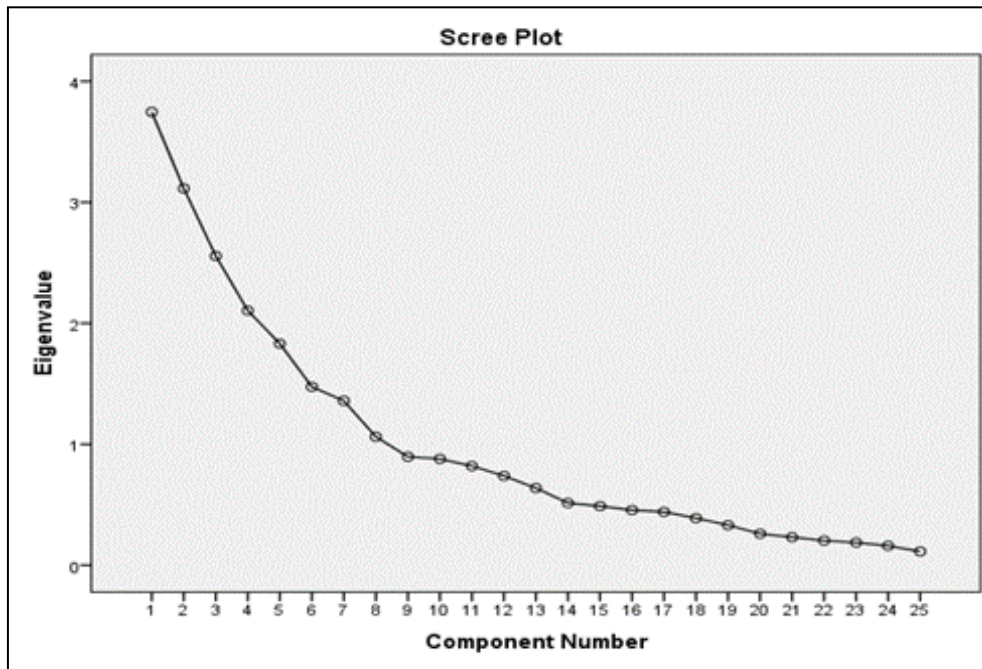


Fig 1

Scree plot representing an optimal number of variables. No. of variables which falls on the steep slopes is to be taken for

extraction purpose. We can clearly examine that the slope started becoming horizontal from the point 9.

Table 2

Component	Total Variance Explained								
	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	3.746	14.986	14.986	3.746	14.986	14.986	2.954	11.817	11.817
2	3.115	12.459	27.445	3.115	12.459	27.445	2.582	10.327	22.144
3	2.556	10.223	37.669	2.556	10.223	37.669	2.504	10.015	32.159
4	2.105	8.419	46.087	2.105	8.419	46.087	2.272	9.089	41.248
5	1.832	7.327	53.414	1.832	7.327	53.414	2.020	8.079	49.327
6	1.475	5.900	59.314	1.475	5.900	59.314	1.861	7.444	56.771
7	1.359	5.436	64.750	1.359	5.436	64.750	1.780	7.119	63.890
8	1.062	4.248	68.998	1.062	4.248	68.998	1.277	5.109	68.998
9	.897	3.588	72.586						
10	.879	3.517	76.104						
11	.820	3.280	79.384						
12	.738	2.952	82.335						
13	.638	2.551	84.886						
14	.514	2.058	86.944						
15	.489	1.955	88.899						
16	.456	1.824	90.723						
17	.441	1.764	92.487						
18	.389	1.558	94.044						
19	.331	1.323	95.367						
20	.260	1.041	96.408						
21	.232	.927	97.335						
22	.204	.816	98.151						
23	.188	.751	98.901						
24	.160	.642	99.543						
25	.114	.457	100.000						

Extraction Method: Principal Component Analysis.

Now the table of communalities theorizes the actual amount of variance in a variable of motivational Research for green tea that is actually total variance accounted for eight factors taken together. Large communalities are listed in computation that is

significant in nature. This guides about the variance in a single variable for factor results. Large communalities accounted which denotes the higher amount of variances extracted by factor method.

Table 3

Communalities		
	Initial	Extraction
1. Green tea is a new health drink for the body.	1.000	.771
2. Green tea provides me a recharge feeling of body	1.000	.768
3. Green tea provides me energy in body	1.000	.777
4. Green tea provides me satisfaction for mental calmness in body	1.000	.714
5. Green tea provides me feeling of getting healthier body	1.000	.676
6. Green tea prices are affordable	1.000	.562
7. Green tea prices are frequently changing	1.000	.657
8. Green tea prices are different in different areas	1.000	.751
9. Green tea prices are discounted prices	1.000	.704
10. Green tea prices for foreign brands are high	1.000	.694
11. Green tea advertisement is the sources of brand information	1.000	.761
12. Green tea advertisements are frequently on television channels	1.000	.743
13. Green tea advertisement are sharing scientific information	1.000	.739
14. Green tea advertisements are frequently occurring on internet	1.000	.741
15. Green tea advertisements are available in forms of hoardings and glow signs	1.000	.718
16. Green tea is easily available in society market shops	1.000	.609
17. Green tea is easily located on retail shelves	1.000	.752
18. Green tea is easily available with kiranawala	1.000	.651
19. Green tea is easily available in surrounding shopping malls	1.000	.629
20. Green tea is easily placed on my ration purchase list	1.000	.724
21. Green tea is offered at social meetings	1.000	.609
22. Green tea-related issues are discussed in society	1.000	.663
23. Green tea advice on flavors are conversation with societal members	1.000	.646
24. Green tea consumption is now reflecting in society	1.000	.460
25. Green tea is now my first choice of morning sip.	1.000	.732

Extraction Method: Principal Component Analysis.

Table 4

Descriptive Statistics			
	Mean	Std. Deviation	Analysis N
1. Green tea is a new health drink for body.	1.7200	.88061	200
2. Green tea provides me a recharge feeling in body	2.6500	.99622	200
3. Green tea provides me energy in body	2.5500	1.05025	200
4. Green tea provides me satisfaction for mental calmness in body	2.7650	1.21539	200
5. Green tea provides me feeling of getting healthier body	2.2300	.92812	200
6. Green tea prices are affordable	2.5450	1.25132	200
7. Green tea prices are frequently changing	3.3000	1.08900	200
8. Green tea prices are different in different areas	2.9900	1.12079	200
9. Green tea prices are discounted prices	3.3350	1.21249	200
10. Green tea prices for foreign brands are high	2.0800	1.19614	200
11. Green tea advertisement is the sources of brand information	2.2250	.95337	200
12. Green tea advertisements are frequently on television channels	2.7850	1.13367	200
13. Green tea advertisement are sharing scientific information	2.6950	1.04279	200
14. Green tea advertisements are frequently occurring in internet	3.2450	1.45103	200
15. Green tea advertisements are available in forms of hoardings and glow signs	3.1350	1.53903	200
16. Green tea are easily available in society market shops	1.9100	1.11270	200
17. Green tea are easily located in retail shelves	2.0600	1.02059	200
18. Green tea are easily available with kirana wala	2.6650	1.28883	200
19. Green tea are easily available in surrounding shopping malls	1.8250	1.18380	200
20. Green tea are easily placed in my ration purchase list	2.9050	1.22617	200
21. Green tea is offered in social meetings	2.9600	1.13793	200
22. Green tea related issues are discussed in society	3.2000	1.02727	200
23. Green tea advices on flavors are conversation in societal members	2.9150	1.07403	200
24. Green tea consumption are now reflecting in society	2.3850	1.03544	200
25. Green tea is now my first choice of morning sip.	2.4900	1.49367	200

Varimax rotation and factor label generation

- Variables 14,15,9 are showing values (.805, .789, .625) these variables indicates internet and discounted pricing, so we can name them as *DIGITAL FACTOR*

Sales implication: Digital factor have boosted the Green tea sales in Noida (NCR region) due to internet presence in society and its wide usage by both companies and customers. Green tea companies are actively involved in putting up the discounted costs in electronic advertisements for promoting sales of the product.

In this research, the researcher identifies the digital factor of extensive advertising and with discounting is a first key factor that accelerates the sales of green tea.

- Variables 6,7,19,16,17 are showing values (.469, .724, .705, .628, .586), variables indicating pricing and availability features that is (affordable pricing and product availability) so we can name these variables as *SPECIALIZED TARGETING FACTOR*

Sales implication: - specialized targeting factor boosts the sales of green tea in this region because of affordable pricing and shelf availability. These two motivator's affordability and shelves availability accelerate sales of green tea as daily usages consumable product and manage the wallet expenses and product cost experiences in the psychology for buying customers. Availability of (green tea packets) in shops and nearby purchasing outlets signifies a rise in sales of the product. This *availability* feature directly connects the demand and sales equation of product to the customers (a. product is available means

sales and stocks available, b. jo deekta hai vohi bikta hai).

- Variables 3, 2, 4, 25 are showing values (.831, .793, .426, .416), these variables connect with the customer's positive health and habit features. We can name them *HEALTH MANAGING FACTOR*

Sales implication: Health managing factor of the product has boosted the sales of green tea in this region because this product has given for some primary level solution for healthier lives. Customers of green tea are consuming this product for managing good physical and mental health (relaxing). This functional attitude has endorsed this product as relaxing drink. In this research, this product cast itself as morning delight of health by (noidians).

- Variables 22, 21, 24, 23 are showing values (0.805, .629, .479, .417), these variables presents societal acceptability of product. We can name the factor as *ACCEPTABILITY FACTOR*.

Sales implication: Acceptability factor in society for the product boosts the sales of the product because it is used now, as daily necessity product served in occasions and even demanded as the third alternative in a refreshing tray with tea and coffee. Societal cultural addition of green tea as a complimentary to milk-based hot drinks with other drinks in societal tiers multiplies the selling targets of green tea.

- Variables 11, 12, 10 are showing values (.861, .591, .494), these variables present effective utilization of traditional

advertisement tools to promote the product and high priced green tea in the market. We can name the factor as *ADVERTISING FACTOR*.

Sales implication: Advertising factor and its approach through televisions about brands suggest in research that companies are actively involved to promote the product not only to the urban population but targeting rural areas as well.

6. Variables 20, 18, 1 are showing value (.401, .381, .812), these variables represent the presence of green tea for consumption in daily usages. We can name it as *AWARENESS FACTOR*

Sales implication: Awareness factor of the product also instructs the companies about the well-informed society about the green tea as a daily need product. Placing green tea in ration list for household purchases by families and analyzing price differences in green tea for different areas reflects customers' analysis for purchasing the green tea. If on analyzing this buying pattern of consumers we reach to the conclusion that customers give importance for buying green tea as a product of household requirement. Local retailers are also selling green tea as daily need product, so this awareness on seller side and buyer side have also entrusted the sales of green tea.

7. Variables 13, 5 are showing values (.793, .506), these variables represents sharing of scientific information. we can name these variables as *SCIENTIFIC FACTORS*.

Sales implication: A Scientific factor of the product instructs about scientific information and relevant availability of facts on the product. This factor directly indicates knowledge improvisation in customer for the product an also aligns health issues with the product.

F. Conclusion: Green tea proves worth as a daily refreshing product. It needs support for recognizing as an essential health supplement. Marketing strategies for promotion can play a better role in demonstrating usages for green tea as a healthier drink.

G. Limitations and Future Scope

1. Research study limits itself in metros.
2. Rural Areas and their product preferences for green tea are the future focus for researchers.

H. Suggestions

1. Use of test market is a proven technique to test the green tea market potential because green tea is (CPG):
- A. Use of *Standard Test Markets (STM)* which acts as a tool for analyzing the Green tea market potential in country and sales revenue forecasts in selected cities.
STM technique induces a positive thrust to market about the green tea which *catalyzes as (market communication device) to the awareness factor, advertising factor and acceptability factor* analyzed in research.

- B. Use of *Controlled Test Markets* which acts as a tool for new product launches for green tea. The main advantage is sales by distributors. Distributors will sell the new green tea-based products.

CTM technique contributes guidance and formal support for the product through channel people which *channelizes as (market informational device)* for product and amplifies the *specialized targeting factor, scientific factors and health managing factor* analyzed in research.

- C. Use of *Simulated Test Markets* which acts as a tool for generating in-house taste preference tests of green tea with new flavors without disclosing the new product specification in competes ting markets.

STM technique invents with secrecy for the product in controlled area or lab. This technique never amplifies or channelizes any factor but controls on *digital factors* of awareness about the product testing phase and related in formations like the taste, color, odor, and packaging.

- D. Entrepreneurial activity is suggested to upcoming entrepreneurs to export and import the Green tea products in Asian Region countries

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