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THE IMPACT OF THE PRODUCT ATTRIBUTES ON CONSUMER CHOICES OF TOOTHPASTE

Sathana.Vaikunthavasan

ABSTRACT

Today increasing competition and rivals supply create more confusion for the selection of suitable product for the consumers. Product attributes usually comprise features, functions, benefits, and uses and they create a meaningful difference in a brand's performance. The objectives of this paper were to identify the relationship and impact of product attributes on consumer choice and to find out significant difference between personal characteristics on consumer choices. Data was collected from the primary source of questionnaires; the population of this study was toothpaste consumers form Nallur, Division. The convenient sample selection was based on demographic and economic variables on different age, sex, job, education, income, family size and life style of that population. Three hundred subjects participated in the experiment. Five critical attributes quality, product variety, price, branding and packaging affecting choice were all perceived equal across brands. Researcher adopted quantitative analysis as, correlation and regression analysis using statistical package (SPSS). This study produced 6 major findings: first, product attributes had taken significant impact on consumer choice, second, quality and product variety of tooth paste created important impact on consumer choice, third, price and Packaging were another important influencing factor of consumer choice, fourth, product branding was also influencing some extent in the selection. Fifth there was positive correlation between product attributes and consumer choices, sixth family income and education characteristic of consumer were more influenced on the consumer choices. Toothpaste Product institution must create innovative and creative attributes changes to succeed in the dynamic and competitive world.

Key words: *Product Attributes, Consumer Choice, Demographic and Economic Variables*

INTRODUCTION

Today's business environment is highly competitive and rapidly changing. If firm wants to succeed in its goals, it has to do a continuous observation of the consumer behavior and their preference, because consumers are the kings in the business world. Much brands and market researchers are targeted at understanding the most significant and powerful attributes of a product/service (Asian Market Research News 2010). A product, service, or brand can have many attributes including cost, value for money, prestige, taste, usability, liking ("affect") and a wide range of image or personality attributes. Usually a client wishes to measure their product or brand as perceived by target markets along several attributes they see important to the brand. If they are in a competitive market, they also sometimes need to know how they rate against competing offerings. In "brands", where attributes are often related to brand personality, image and brand identification related variables,

In Sri Lanka there are many varieties of tooth pastes available from national and international wide as Colgate, signal, Supiriviki, , Pepsodent, Close-up , Clogard etc. Every people use tooth paste in daily basis. The selection of toothpaste may vary according to the attributes preferred by the consumers. Preference varies according to the demographic and economic characteristics of consumer. Considering product attributes influences on consumer choices for the analysis creates successive marketing for the productive organization.

Consumer purchases are influenced strongly by cultural social personal and psychological characteristics. Marketer cannot control such factors, but they must take them into account (Philips Kotler, 2001). The personal factors are Age, sex,education, and life-cycle stage(number of family members) , Occupation, Economic situation as trends in personal income, savings and interest rates.

Consumers decision-making process was based on their evaluations of the multiple attributes associated with the product (Green and Wind, 1973). New firms entered the market offering variety of branded products differentiated by many different product attributes. The purpose of this study was to determine how consumers evaluate the different attributes of tooth paste products in making Purchase decisions. More specifically, this study used to assess consumers' preferences for tooth pastes, and to identify the underlying important attributes that influence consumers' decision-making and choice behavior by the personal factors.

BACKGROUND OF THE RESEARCH PROBLEM

In Sri Lanka, all tooth paste market has a high degree of penetration through toothpaste products. In 2005, Lanka Market Research Bureau (LMRB) estimated this market to be worth Rs. 2.5 billion. Toothpaste accounts for marginally over Rs. 2 billion, with an annual volume of approximately 4,500 metric tonnes. The market is dominated by two brands: Signal – with a 53% volume share in 2005 – marketed by Unilever Sri Lanka; and Clogard – with a 33% share in 2005 – marketed by Hemas. The other significant player in this market is Supirivicky, a local Ayurvedic toothpaste from Siddhalepa, with an 8% share of sales volume. The rest of the market consists mainly of herbal brands.

Today, it represents a flourishing sector with several sub segments to satisfy the different types of consumers who have different personal characteristics. The ingredients that go into toothpastes are often used to position them differently across different demographic groups and regions. Investing in a market dominated by Unilever was a bold and risky initiative at the time, primarily due to the multinational's strong positioning both locally and regionally, and its extensive supply chain and distribution networks. Unilever's Signal brand had 95% market share and high brand equity. Today, Clogard is now placed in a respected position in the marketplace – as a trusted brand

with a healthy heritage in oral care, with the one limitation of having the brand's equity very closely linked to clove oil, making expansion a challenging task.

But Clogard successfully introduced new range of toothbrushes to complete its oral-care range. But within a very short time, it became the second largest toothpaste brand in the country with a one-third share of market volume. In keeping with the brand's indigenous positioning, Clogard was launched at a significant discount in comparison to the market leader – but over time, it has nearly closed this price differential, with no impact on sales volumes. Most users of toothpaste use multiple brands with different varieties . Clogard has a loyal consumer base of 12% of all users (Clogard publication, 2011).

Today , because of increasing global competition toothpaste product companies clearly indentifies that there must be proper strategies on product attributes to achieve the positioning . acocridng to the researchers were made on clogard , it uses different quality, variety, discount prices, brand equity and packaging technique. So, researcher was identified that it was very important to take Analysis of influence of product attributes of tooth paste on consumer choices.

RESEARCH PROBLEM
While a consumer comes to purchase, his/ her economic and demographic characteristics of such consumer influenced in the brand selection. Economic and demographic characteristics here were considered as personal characteristics of consumers as age, sex, education, family income, family member and job(Philips Kotler, 2001). Further each brand consists of different preferable attributes. Here the attributes of toothpastes were identified quality, product variety, price, branding and packaging (Philips Kotler, 2001,Clogard publication, 2011). So in the research it was analyzes that how the each attributes associated with each brand selection. According to the personal characteristics and the attributes of each brand consumer choices varied, which is also identified with this research problem of what extent product attributes of toothpastes affected the consumer choice.

1. How the each product attributes associated with consumer choices?
2. What extent personal characteristics of consumers affect the consumer choices?

LITERATURE REVIEW AND CONCEPTUAL FRAMEWORK
The basic concept of consumer demand theory is that consumers expected wants and needs are satisfied from the - attributes of the goods. It assumes that a product can be described in terms of a set of multidimensional attribute profiles, A product is a good, service, or idea consisting of a bundle of tangible and intangible attributes that satisfies consumers and is received in exchange for money or some other unit of value. Product Attributes are the characteristics by which products are identified and differentiated.

Product attributes usually comprise features, functions, benefits, and uses. Quality reflects performance, durability, reliability, specification and features. Product

variety includes the different product category to different customer segment with different ingredients and different sizes as for children, men, women, old people, sensitive teeth etc. Price levels reflect the range of prices observed at the time of the study and prices vary according to the segmentation. A Branding is the name, term, sign, symbol, design, or combination of these intended to identify the good or service, and differentiate them from those of competitors. The levels for brand name and packaging represent the characteristics of product differentiations available in the market.

Economic and Demographics comprises selected Characteristics of the aggregate population that marketers use to segment the market, including age, ethnicity, income, education, gender, race, occupation, family size, religion, and social class. These characteristics are the link to buyers' wants and needs and affect purchasing behavior (Kotler, P., Armstrong, G., Saunders, J. and Wong, V. 1999).

The research was originated by YUN-JU (KELLY) CHEN,B.S :
" Findings also suggested that it is likely beneficial for wool producers to differentiate their product by promoting products' attributes, such as organic, animal-friendly, and environment-friendly. Further, brief information on product attributes provided with labels could increase consumers' WTPs".

In the research created by Chung L. Huang and Joe Fu:
"Results suggest that brand name, packaging, and CAS label are the most important attributes that influence consumers' overall judgment of sausage quality. Price and retail outlet are found to be relatively unimportant attributes in consumers' product evaluation. Prices would be relatively small compared with forgoing brand name, packaging, or CAS label. To sausage producers, the most important marketing implication is to establish brand name loyalties among consumers. Although meat packaging using nitrogen flush technology has the advantages of extending shelf-life and maintaining original color and flavor, this improved method evidently has not gained widespread acceptances among Taiwanese consumers"

Dragan Miljkovic, Jian Gong, and Linda Lehrke, said in their research:
"The Effects of Trivial Attributes on Choice of Food Products Subjects understood that trivial attributes are less important than substantive attributes. Substantive (important) quality attributes and economic variables affecting choice were all perceived equal across brands by the subjects in the experiment".

Rajesh Rajaguru and Margaret J Matanda, revealed the fact in their research:
"The results suggest that except product price, other store and product attributes have positive effects on customer loyalty. Store attributes such as service quality and convenience of store and product attributes such as product quality, price and availability of new products show significance towards customer loyalty".

Finding of the research of Sara s, duvenage, HettiecSchonfeldt and Rozanne Kruger, Food described as :

"the focus of the study was to ascertain the food product attributes prioritized by low-income consumers during purchasing choice of their staple food, maize meal. Satiety value and affordability were most importance attributes of maize meal to low income consumers. Value perceived for taste, product acceptability and convenience were higher level importance for each product attributes. For appearance, product quality, nutrient content, texture, product safety and brand loyalty, a higher and mostly significant similarity in value between higher incomes, but lower value for the low-income group".

For the purpose of this study, five important product attributes affecting the purchasing decision toothpaste were identified, the selected attributes were:

1. Quality (Kotler, P., Armstrong, G., Saunders, J. and Wong, V. 1999, Green and Wind, 1973, Yun-ju(Kelly) Chen,B,S,2001, Chung L. Huang and Joe Fu and Rajesh Rajaguru and Margaret J Matanda,),
2. Product variety (Kotler, P., Armstrong, G., Saunders, J. and Wong, V. 1999, Green and Wind, 1973, Rajesh Rajaguru and Margaret J Matanda),
3. Price (Kotler, P., Armstrong, G., Saunders, J. and Wong, V. 1999, Yun-ju(Kelly) Chen,B,S,2001, Rajesh Rajaguru and Margaret J Matanda,)
4. Branding (Kotler, P., Armstrong, G., Saunders, J. and Wong, V. 1999, , Yun-ju(Kelly) Chen,B,S,2001, Chung L. Huang and Joe Fu and Rajesh Rajaguru and Margaret J Matanda,)and
5. Packaging(Kotler, P., Armstrong, G., Saunders, J. and Wong, V. 1999, and Rajesh Rajaguru and Margaret J Matanda,).
6. Further the research had taken the consideration of personal variables influences on the consumer choices as Age, gender, education, family income, occupation and family style(number of family members) (Kotler, P., Armstrong, G., Saunders, J. and Wong, V. 1999, Dragan Miljkovic, Jian Gong, and Linda Lehrke, Green and Wind, 1973, Sara s, duvenage and HettiecSchonfeldt and Rozanne Kruge,),

Following conceptual framework was created by the researcher for the tooth paste products from above all researches, explanations of literatures and experiences.

Figure No 1: Conceptual framework
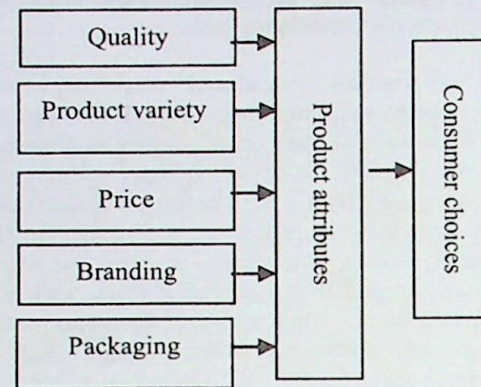
Objective of the study

The main objective of the study was to
1. identify the relationship and impact of product attributes on consumer choice, and
2. To measure the relationships of each product attributes variable associated with consumer choice.

Secondary objectives are:
1. To find out significant difference between personal characteristics on consumer choices

Hypotheses of the study

The following hypotheses are formulated for the study

H1: Product attributes have significant impact on consumer choices

H2: There is significant relationship between product attributes and consumer choices

H3: There is significant relationship between products attributes variables on consumer choice.

H4: There is an association between personal characteristics and brand selection on consumer choices.

METHOD

The data used for this study were collected from questionnaires of 300 respondents who resided in the city of Nallur Division and 5 point likert scale used to score the variables. Respondents were selected from convenient samples. The Nallur Division was classified into 40 Grama officers divisions. From each division, every important retail shop was selected, this selection included 3 super markets also. The survey was conducted from September to December 2010 and 10 questionnaires were issued to each shops, total 400 questionnaires, but 343 questionnaires were returned, only 304 was properly filled questionnaires, so 300 questionnaires were used to analyze.

Data were analyzed using the computer based statistical data analysis package, SPP (version 17) for reliability and relationship and impact testing .A pilot survey was made to test the reliability and validity with the samples of the 300 respondents, a consistence check with co-efficient was made to identify the reliability of the instruments, for this purpose Cronbach's Alpha was computed.

Further to find out the brand selection vary according to the characteristics of economic and demographic variables; t-test and ANOVA test were used. Finally the

relationship and impact of product attributes on consumer choices were analyzed with the correlation and regression analysis.

The variables indicators of the research model and the source to those particular variables were as follows:

Table No 1: operationalization and sources

Variables	Aspects	Quest ions	source
Quality	performance	1-3	Kotler, P. and Armstrong, G. (1997)
	preciousness		
	specification and features		
Product variety	features improvement	4-6	Davies, M. (1998)
	different customer segments		
	different ingredients		
	different sizes		
Price	reasonableness	7-9	
	Discounts		
	Promotional prices		
Branding	Brand loyalty	10-12	Lury, G.(1998)
	Brand awareness		Van Auken, B. (2002)
	Brand reliability		
Packaging	Attractiveness	13-15	
	protection		
	information		
Consumer choices	Continuous purchase	16-30	Loudon, D.L. and Della Bitta, A.J. (1993)
	satisfaction		Peter, J.P. and Olson, J.J. (1996)
	Communication		Assael, H. (1992)
	Long term retentions		
	Value creations		
	Availability		
	Improvement aspects		

RESULT AND DISCUSSION

A pilot survey was made to test the reliability and validity with the samples of 300 consumers. A consistency checks

with co-efficient was made the cronbach's Alpha value. According to the table No 2, it was computed as points 0.822 and 0.874 for product attributes and consumer choice respectively. These values indicated a high reliability of data and researcher satisfied with instruments and then decided to continue the study.

Table No 2: Reliability test

Variables	Cronbach's Alpha value
Product attributes	0.835
Consumer choice	0.874

Table No 3: Regression value

Variables	R^2
Product attributes & Consumer choice	0.655
Quality and Consumer choice	0.487
Product variety and Consumer choice	0.484
Price and Consumer choice	0.390
Branding and Consumer choice	0.303
Packaging and Consumer choice	0.294

The table 3 explained that the Regression analysis, it was used to find out the impact of product attributes on consumer choice. Regression value was 0.655, this meant that product attributes contributed to intervene the levels of consumer choice by 65.5% and remaining 34.5% can be attributed by other factors which were not incorporated in the present study, because that was outside the scope of study. So the first hypothesis of significant impact by product attributes on consumer choices was proved by the analysis.

Regression value 0.487 was identified between quality and consumer choice. Which indicated that 48.7 % of Quality attributes influenced on consumer choice. The 48.4% of consumer choice was accounted by the attributes of product variety. Price and consumer choice regression value was indicated that when 1 unit of price increases took impact 0.390unit on consumer choice. The impact of branding on consumer choice was 0.294; it explained that branding took impacts 29.4% on consumer choice. Finally the regression value of 0.303 explained that the 30.3% impact was considered by the packaging on consumer choice. Hence important impact between products attributes variables on consumer choices were proved in this research.

Further in the present study, analysis was made to find out the relationship of product attributes on consumer choice. Based on the score of questionnaires the correlation between product attributes and consumer choice were presented in Table No 4

Table No 4: Correlation matrix

	Quality	Variety	Price	Branding	Packaging	PA	Conch
Quality	1	.940(**)	.622(**)	.453(**)	.288(**)	.873(**)	.698(**)
Variety	.940(**)	1	.620(**)	.355(**)	.335(**)	.861(**)	.696(**)
Price	.622(**)	.620(**)	1	.392(**)	.330(**)	.761(**)	.624(**)
Branding	.453(**)	.355(**)	.392(**)	1	.561(**)	.702(**)	.542(**)
packaging	.288(**)	.335(**)	.330(**)	.561(**)	1	.647(**)	.550(**)
PA	.873(**)	.861(**)	.761(**)	.702(**)	.647(**)	1	.809(**)

** Correlation is significant at the 0.01 level (2-tailed).

Table No 4 indicated that there was strong positive correlation between product attributes and consumer choice by the value of 0.809** which was significant at 0.01 levels. Further attempts were made to find out relationship between each attributes such as quality, product variety, price, branding and packaging on consumer choice. For this purpose the multiple correlation matrixes was computed. The association between quality and consumer choice was confirmed with the correlation value of 0.698 ** which was significant at 0.01 level, correlation value between Product variety and consumer choice was 0.696** which was significant at 0.01 level. The association between price and consumer choice was confirmed with the correlation value of 0.624** which was significant at the 0.01 level. Then the correlation value of branding and packaging was 0.542** and 0.550** respectively which was positive relationship and significant at the 0.01 level. The hypothesis three of significant relationship between products attributes and consumer a choice was proved by this correlation analysis.

The association between personal characteristics and consumer choices had also clearly analyzed and summarized in Table No 5 and table No 6 The table 4 explained the t-test values with consumer choices were affected by gender characteristics.

Table No 5: t-test for customer personal variables for brand selection

Variables	t-value	Sig.Level	N	Mean value
Male	0.304	N.S	140	60.42
Female	0.304	N.S	158	61.28

There was no association between gender group and brand selection. There was no significance different between male and female employees on the perception of consumer choices. Both gender groups were no differences in brand selection.

The table No 6 explained with the ANOVA test that the variables of age, job, family income, education and number of family members influenced on consumer choice.

Table No 6: ANOVA –test for employee on the variable of brand selection.

Variables	f-values	Sig. level	N	Mean value
Job	1.171	N.S		
Employee			118	60.38
Students			75	61.35
House wife			74	61.27
Pensioner			31	60.71
Family Incomes	2.352*	0.05		
Below 20, 000			44	71.23
20, 001 – 35, 000			176	82.40
Above 35, 001			78	87.85
Education	5.824	0.01		
O/L			17	58.84
A/L			132	61.21
Graduates			80	61.80
Post Graduates			69	62.10
Family Members	1.317	N.S.		
1 – 2			11	60.45
3 – 5			162	60.52
Above 5			125	61.42
Age	0.495	N.S		
18 – 30			105	61.21
31 – 40			71	61.32
41 – 50			58	59.65
50 above			64	60.95

In the Table No 6 the f-Values shown that there was no significant difference between the different as age, job and number family members of consumers on brand selection. Whereas, the family income and education had a significant effect on the consumer choices purchase decisions. F-value of 2.352** on family income shown that the income had a significant effect on consumer choice.

Thus, as monthly income of consumer increased, the level of consumer choice in brand selection also increased. Employee who had monthly family income of above Rs 35001 were highly increased in the consumer choices. Similarly education had a positive and high relationship on consumer choices. Employees with higher education standards had higher level of consumer choices. Education can give a general understanding of consumer choice on product value. When consumers with the higher education they had properly selected the product and got higher perceived value and satisfaction on consumption.

CONCLUSION

The study concluded that there was significant impact between products attributes and consumer choices which were take in the present study, hence the hypothesis one was accepted. Further the study also analyzed significant relationship was identified between products attributes variables and consumer choices which was also proved by this research. Further there was no significant difference between the some personal characteristic and consumer choices, such as gender group, age, job and number of family members. But there was significant different among education and family income on consumer choice,

that is these variables had a significant effect on consumer choice. Therefore hypothesis three was partially accepted or partially rejected. According to the result the increasing education and family income increased the level of consumer choices.

DISCUSSION AND RECOMMENDATION

The organizations should take action to keep the product attributes more effective to compete and survive in the global world. In these attributes quality was very important powerful tool to access more demand of consumers as its performance of product, durability, reliability and value. Product variety also taken more impact on consumer choices, because same type of product can not satisfy all consumer segments, so different varieties must satisfy different segments. Further the pricing includes cost of inputs, competitor's prices, product variety, profit margins, other promotional costs and survival strategies; finally the price must be accepted by all consumers reasonably. Hence price is also important factor to analyze this research. A Branding is the name, term, sign, symbol, design, or combination of these intended to identify the good or service, and differentiate them from those of competitors. Brand loyalty and brand equity increase the retention rate of consumers. Packaging also affects the consumer choices because first impression about the product is created by the attractive, quality and designing of the packaging.

Furthermore the factors of economic and demographic variables of consumers have major impact on consumer choices; it may be described as personal variables of consumers. This variable takes more influences and helps to target, segment and position the market.

It may be denoted that all toothpaste production companies must consider the product attributes for their competitive success and long term survival. But these attributes may vary according to the type of the product. It is very important to consider the personal variables of consumers to create customer loyalty.

Directions for the future research

My research area was restricted to a particular division in the Jaffna District, but further researches can be done with more area of the Sri Lanka. Further I had taken five product attributes for my analysis, but these attributes may vary according to the type of product. Consumer purchases are influenced strongly by cultural, social, personal and psychological characteristics. These characteristics may vary place to place and product to product, these considerations are very important to different types of product.

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Sathan.Vaikunthavasan
Lecturer
Department of Marketing
University of Jaffna
Sri Lanka
sathanavaikunthavasan@yahoo.com