

**A STUDY OF CONSUMER BUYING BEHAVIOR IN FMCG SECTOR  
(LOW INVOLVEMENT PRODUCTS)**

**Priyanka Chaudhary, MBA**

**Research scholar, Sai Nath University, Established by the Jharkhand Government and -  
recognized as per section 2(f) of UGC Act, 1956.,Bariatu Road, Near Booty More,  
Ranchi, Jharkhand**

**ABSTRACT**

A decade ago, the advertising to sales promotion ratio was about 60:40. Today in many packaged consumer goods companies, sales promotion accounts for almost 65% to 75% of the combined budget. Sales promotion expenditures have been increasing as a percentage of budget expenditure annually for the last two decades and the fast growth is expected to continue.

Competitors use a variety of techniques to encourage consumers to try their brands such as new product introductions, free samples and other promotional offers. Marketers must continually battle to maintain their loyal consumers, while at the same time replacing those who switch brands.

‘Premium’ is a type of sales promotion device used by many marketers. A premium is an offer of an item of merchandise or services either free or at a lower price that is used as an extra incentive for purchase. Marketers’ use of premium offers is changing in favor of “value added” premiums that reflects the quality of the products and are consistent with their image and positioning in the market.

While purchase decisions for non durable, convenience items may occur before actual purchase, these decisions sometimes take place in stores, as decision and purchase occur almost simultaneously. Marketers must recognize that these types of decisions are influenced at the actual point of purchase. Promotional tools such as on-package coupons or premium offers may be helpful in influencing decisions made through constructive processes at the point of purchase. These promotional tools can supplement or reinforce the awareness or brand identity created by the advertising program.

**Objective-** The objectives of the Research Work in this thesis are:

- To understand the importance of Premium offers in the purchase decision of low-involvement products.

- 
- To find out the impact of Premium offers on the purchase behavior of customers.

### **Research Methodology**

**The Study-** The study is exploratory in nature. At the beginning, the first task was to select specific products in low involvement sector to achieve the objectives of this study. The products chosen for this study are ‘Toothpaste’ and ‘Detergent Powder’. The products are chosen keeping in mind that there are premium offers generally offered with these products.

**The Sample-** The study was conducted in New Delhi with the sample size of 200 respondents.

### **The Tools**

For data collection: Primary data in this study collected through a questionnaire.

For data analysis: Appropriate statistical tools such as Mean and Standard Deviation used. Apart from this, Z – test was also applied to test the significance of difference between the responses of the respondents for Toothpaste and Detergent powder.

## **INTRODUCTION**

A decade ago, the advertising to sales promotion ratio was about 60:40. Today in many packaged consumer goods companies, sales promotion accounts for almost 65% to 75% of the combined budget. Sales promotion expenditures have been increasing as a percentage of budget expenditure annually for the last two decades and the fast growth is expected to continue.

Competitors use a variety of techniques to encourage consumers to try their brands such as new product introductions, free samples and other promotional offers. Marketers must continually battle to maintain their loyal consumers, while at the same time replacing those who switch brands.

‘Premium’ is a type of sales promotion device used by many marketers. A premium is an offer of an item of merchandise or services either free or at a lower price that is used as an extra incentive for purchase. Marketers’ use of premium offers is changing in favour of “value added” premiums that reflects the quality of the products and are consistent with their image and positioning in the market.

While purchase decisions for non durable, convenience items may occur before actual purchase, these decisions sometimes take place in stores, as decision and purchase occur

almost simultaneously. Marketers must recognize that these types of decisions are influenced at the actual point of purchase. Promotional tools such as on-package coupons or premium offers may be helpful in influencing decisions made through constructive processes at the point of purchase. These promotional tools can supplement or reinforce the awareness or brand identity created by the advertising program.

### **OBJECTIVES AND SCOPE OF THE STUDY**

The objectives of the Research Work in this thesis are:

- To understand the importance of Premium offers in the purchase decision of low-involvement products.
- To find out the impact of Premium offers on the purchase behaviour of customers.
- To understand the decision making criteria of consumers while purchasing low involvement products.

### **RATIONALE OF THE STUDY**

This study focuses upon the relevance of price, premium offers, and level of involvement while purchasing low involvement products to understand the buying behaviour of consumers.

If a marketer can identify consumer buyer behaviour, he or she will be in a better position to target products and services at them. Buyer behaviour is focused upon the needs of individuals, groups and organisations.

It is important to understand the relevance of human needs to buyer behaviour

Buying Behaviour is the decision processes and acts of people involved in buying and using products.

Consumer Buying Behaviour refers to the buying behaviour of the ultimate consumer. A firm needs to analyze buying behaviour for:

- Buyer's reactions to a firm's marketing strategy has a great impact on the firm's success.
- The marketing concept stresses that a firm should create a Marketing Mix(MM) that satisfies (gives utility to) customers, therefore need to analyze the what, where, when and how consumers buy.

- Marketers can better predict how consumers will respond to marketing strategies.

Types of consumer buying behaviour are determined by:

- Level of Involvement in purchase decision. Importance and intensity of interest in a product in a particular situation.
- Buyers level of involvement determines why he/she is motivated to seek information about a certain products and brands but virtually ignores others.

### **LITERATURE REVIEW**

### **FMCG SECTOR**

Fast Moving Consumer Goods (FMCG) goods are popularly named as consumer packaged goods. Items in this category include all consumables (other than groceries/pulses) people buy at regular intervals. The most common in the list are toilet soaps, detergents, shampoos, toothpaste, shaving products, shoe polish, packaged foodstuff and household accessories and extends to certain electronic goods. These items are meant for daily or frequent consumption and have a high return.

A major portion of the monthly budget of each household is reserved for FMCG products. The volume of money circulated in the economy against FMCG products is very high, as the number of products the consumer use is very high. Competition in the FMCG sector is very high resulting in high pressure on margins.

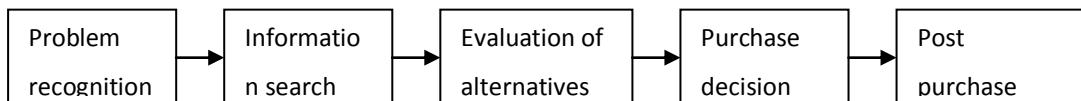
### **BUYING DECISION PROCESS**

Marketers have to go beyond the various influences on buyers and develop an understanding of how consumers actually make their buying decisions. Marketers must identify who makes the buying decision, the buying decisions that are involved and the steps in the buying process.

#### ***Stages in buying Decision Process***

Based on examination of many consumer reports of buying episodes, consumer behaviour researches have proposed “stage models” of the buying process. Stage models are mostly relevant to complex decision making – i.e. buying experience, high involvement products. This model emphasizes that the buying process starts long before the actual purchase and has

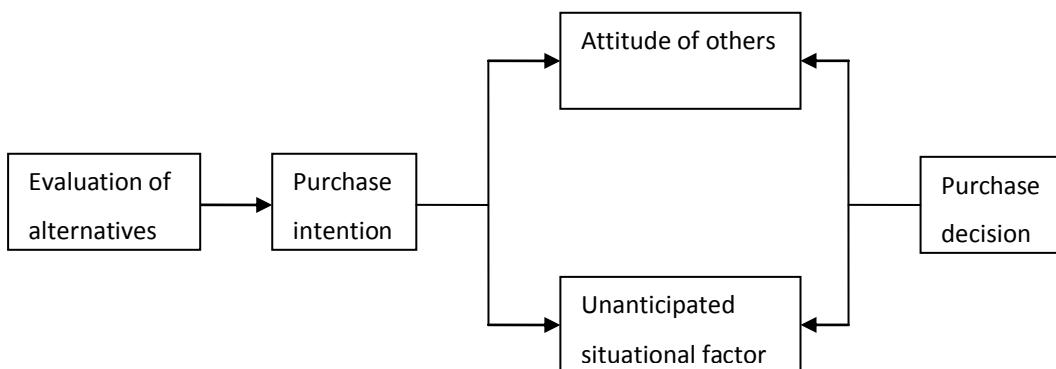
consequences long after the purchase. It encourages the marketer to focus on the buying process rather than on the purchase decision.



*Stages in buying decision process*

### **Purchase decision**

At some point in the buying process, the consumer stop searching for and evaluating information about alternative brands in the market and make a purchase decision. As an outcome of the alternative evaluation stage, the consumer may develop a purchase intention or a predisposition to buy a certain brand. Purchase intentions are generally based on a matching of purchase motives with attributes or characteristics of brands under consideration.



*Stages between purchase intention and purchase decision*

## **RESEARCH METHODOLOGY**

### **The Study**

The study is exploratory in nature. At the beginning, the first task is to select specific products in low involvement sector to achieve the objectives of this study. The products chosen for this study is ‘Detergent Powder’. The product is chosen keeping in mind that there are premium offers generally offered with these products.

### **Hypothesis Formulation**

One tailed Z-test for the difference between the means of two samples is used to test the Hypothesis. If the values of mean, standard deviation, and sample size of two random samples respectively are given then the Z statistics is calculated.

The hypothesis will be accepted or rejected at 5% level of significance i.e. if Z statistics value is less than 1.96, the null hypothesis is accepted, and if the Z statistics value is more than 1.96, the null hypothesis is rejected.

1)  $H_0: \mu_1 = \mu_2$ ; There is no significant difference in the importance of brand name for purchase decision of Detergent Powder.

$H_1: \mu_1 \neq \mu_2$ ; There is a significant difference.

2)  $H_0: \mu_1 = \mu_2$ ; There is no significant difference in the different brands of Detergent Powder available in the market.

$H_1: \mu_1 \neq \mu_2$ ; There is a significant difference.

**The Sample-** The study will be conducted in New Delhi with the sample size of 200 respondents.

**The Tools- For data collection:** Primary data in this study collected through a questionnaire.**For data analysis:** Appropriate statistical tools such as Mean and Standard Deviation used. Apart from this, Z – test was also applied to test the significance of difference between the responses of the respondents for Toothpaste and Detergent powder.

### **DATA ANALYSIS & INTERPRETATION**

One tailed Z-test for the difference between the means of two samples is used to test the Hypothesis. If the values of mean, standard deviation, and sample size of two random samples respectively are given then the Z statistics is calculated.

The hypothesis will be accepted or rejected at 5% level of significance i.e. if Z statistics value is less than 1.96, the null hypothesis is accepted, and if the Z statistics value is more than 1.96, the null hypothesis is rejected.

1.  $H_0: \mu_1 = \mu_2$ ; There is no significant difference in customers taking care about which brand of Detergent Powder and Tooth Paste they buy.

$H_1: \mu_1 \neq \mu_2$ ; There is a significant difference.

Z statistics = 1.727

The hypothesis is accepted at 5% level of significance.

2.  $H_0: \mu_1 = \mu_2$ ; There is no significant difference in the different brands of Detergent Powder and Tooth Paste available in the market.

$H_1: \mu_1 \neq \mu_2$ ; There is a significant difference.

Z statistics = 2.978

The hypothesis is rejected at 5% level of significance.

3.  $H_0: \mu_1 = \mu_2$ ; There is no significant difference in the customers taking advantage of incentives offered on Detergent Powder and Tooth Paste.

$H_1: \mu_1 \neq \mu_2$ ; There is a significant difference.

Z statistics = 0.675

The hypothesis is accepted at 5% level of significance.

4.  $H_0: \mu_1 = \mu_2$ ; There is no significant difference in terms of concern of the customer for premium offer on Detergent Powder and Tooth Paste.

$H_1: \mu_1 \neq \mu_2$ ; There is a significant difference.

Z statistics = -0.091

The hypothesis is accepted at 5% level of significance.

5.  $H_0: \mu_1 = \mu_2$ ; There is no significant difference in the importance of brand name for purchase decision of Detergent Powder and Tooth Paste.

$H_1: \mu_1 \neq \mu_2$ ; There is a significant difference.

Z statistics = -1.650

The hypothesis is accepted at 5% level of significance.

6.  $H_0: \mu_1 = \mu_2$ ; There is no significant difference in the importance of product quality for purchase decision of Detergent Powder and Tooth Paste.

$H_1: \mu_1 \neq \mu_2$ ; There is a significant difference.

Z statistics = -0.137

The hypothesis is accepted at 5% level of significance.

7.  $H_0: \mu_1 = \mu_2$ ; There is no significant difference in the importance of premium offered for purchase decision of Detergent Powder and Tooth Paste.

$H_1: \mu_1 \neq \mu_2$ ; There is a significant difference.

Z statistics = 2.863

The hypothesis is rejected at 5% level of significance.

8.  $H_0: \mu_1 = \mu_2$ ; There is no significant difference in the importance of style for purchase decision of Detergent Powder and Tooth Paste.

$H_1: \mu_1 \neq \mu_2$ ; There is a significant difference.

Z statistics = -6.627

The hypothesis is rejected at 5% level of significance.

**9.**  $H_0: \mu_1 = \mu_2$ ; There is no significant difference in the importance of price for purchase decision of Detergent Powder and Tooth Paste.

$H_1: \mu_1 \neq \mu_2$ ; There is a significant difference.

Z statistics = 0.640

The hypothesis is accepted at 5% level of significance.

**10.**  $H_0: \mu_1 = \mu_2$ ; There is no significant difference in the importance of product specification for purchase decision of Detergent Powder and Tooth Paste.

$H_1: \mu_1 \neq \mu_2$ ; There is a significant difference.

Z statistics = -1.462

The hypothesis is accepted at 5% level of significance.

**11.**  $H_0: \mu_1 = \mu_2$ ; There is no significant difference in the waiting time if premium offer is not available on Detergent Powder and Tooth Paste.

$H_1: \mu_1 \neq \mu_2$ ; There is a significant difference.

Z statistics = 0.737

The hypothesis is accepted at 5% level of significance.

**12.**  $H_0: \mu_1 = \mu_2$ ; There is no significant difference in essentiality of premium offer on Detergent Powder and Tooth Paste.

$H_1: \mu_1 \neq \mu_2$ ; There is a significant difference.

Z statistics = 1.133

The hypothesis is accepted at 5% level of significance.

**13.**  $H_0: \mu_1 = \mu_2$ ; There is no significant difference in benefits of premium offer on Detergent Powder and Tooth Paste.

$H_1: \mu_1 \neq \mu_2$ ; There is a significant difference.

Z statistics = 0.681

The hypothesis is accepted at 5% level of significance.

**14.**  $H_0: \mu_1 = \mu_2$ ; There is no significant difference in need for premium offer on Detergent Powder and Tooth Paste.

$H_1: \mu_1 \neq \mu_2$ ; There is a significant difference.

Z statistics = -0.766

The hypothesis is accepted at 5% level of significance.

**15.**  $H_0: \mu_1 = \mu_2$ ; There is no significant difference in pleasurable of premium offer on Detergent Powder and Tooth Paste.

$H_1: \mu_1 \neq \mu_2$ ; There is a significant difference.

---

Z statistics = -1.171

The hypothesis is accepted at 5% level of significance.

**16.** H<sub>0</sub>: μ<sub>1</sub> = μ<sub>2</sub>; There is no significant difference in the premium offers on Detergent Powder and Tooth Paste being exciting.

H<sub>1</sub>: μ<sub>1</sub> ≠ μ<sub>2</sub>; There is a significant difference.

Z statistics = -2.191

The hypothesis is rejected at 5% level of significance.

**17.** H<sub>0</sub>: μ<sub>1</sub> = μ<sub>2</sub>; There is no significant difference in the premium offers on Detergent Powder and Tooth Paste being fun.

H<sub>1</sub>: μ<sub>1</sub> ≠ μ<sub>2</sub>; There is a significant difference.

Z statistics = -0.119

The hypothesis is accepted at 5% level of significance.

**18.** H<sub>0</sub>: μ<sub>1</sub> = μ<sub>2</sub>; There is no significant difference in the customer buying Detergent Powder and Tooth Paste without incentives.

H<sub>1</sub>: μ<sub>1</sub> ≠ μ<sub>2</sub>; There is a significant difference.

Z statistics = 0.706

The hypothesis is accepted at 5% level of significance.

### **CONCLUSION**

The two objectives mentioned earlier have been accomplished with the following results:

#### **Importance of Premium offers purchase decision;**

Premium offers are considered to be of least importance while taking decisions for purchase of FMCG items. The data reveals that in both the cases for Detergent Powder as well as Tooth Paste, premium offer is ranked the last among the six factors i.e. brand name, product quality, premium offered, style, price, and product specification considered for purchase decision. The average scores are 4.00 and 3.29 for Detergent Powder and Tooth Paste respectively.

Impact of premium offers on purchase behavior;

The average score of 2.64 indicates that customers disagree partially that incentive influences them to buy the products.

Customers do not buy the goods only because of incentives as the mean score is 2.61 on a 7 point scale.

The average score of 4.17 and 4.33 of Detergent Powder and Tooth Paste respectively indicates that customer disagree partially that they are ready to wait for the incentive offers.

Customers do not find the incentive offers essential, beneficial, needed, pleasurable, exciting and fun as the Mean scores are 3.24, 3.23, 2.23, 2.53, 3.18, and 3.34 respectively for Detergent Powder.

From the above results, we can conclude that incentives do not impact the purchase behavior of FMCG items in general.

### **RECOMMENDATIONS**

#### **FOR THE MARKETER**

Premium offers only influences the brand switching to a very small extent. The main factors for taking purchase decision are price, product quality and brand name. Hence marketers need to focus more on these three aspects rather the incentives alone.

Majority of the customers want the prices to be reduced (value of the incentive offered) than the gifts or other incentives offered. It is also seen that Bazee.com and other websites are able to attract customers not because of the premium offers but the price benefits communicated by them to the customers.

As the survey reveals, most of the customers do not find the incentives/premium offers to be essential or needed by them. Hence they do not find any value addition done by the marketer.

#### **FOR RESEARCHERS**

The study reveals that the different types of incentives offered till now have been neither needed nor considered essential by the customer. So, to design a proper and effective sales promotion strategy, the research should focus on what are the different types of incentives which would be considered as value addition by the customers.

**APPENDICES & BIBLIOGRAPHY**

**QUESTIONNAIRE**

NAME : \_\_\_\_\_

AGE : \_\_\_\_\_

SEX : Male/Female

OCCUPATION : \_\_\_\_\_

EDUCATIONAL QUALIFICATION : a) HSC ( 10<sup>th</sup>)      b) SSC ( 12<sup>th</sup>)

c) Graduate      d) Post-Graduate

MONTHLY HOUSEHOLD INCOME : a) Upto Rs.6000

b) Rs. 6000 – 10000

c) Rs. 10000 -15000

d) Above Rs.15000

---

1) When I buy products, I like to be sure that I am getting my money's worth.

7            6            5            4            3            2            1

Strongly Agree Agree Agree Can't Disagree Disagree Strongly

Agree Generally Partially say Partially Generally Disagree

2) Incentive offers cause me to buy the products, normally I won't buy.

7            6            5            4            3            2            1

Strongly Agree Agree Agree Can't Disagree Disagree Strongly

Agree Generally Partially say Partially Generally Disagree

3) I have favorite brands but most of the time I buy the brand that is having incentive offers with it.

7            6            5            4            3            2            1

Strongly Agree      Agree      Can't say      Disagree      Disagree      Strongly

Agree      Generally      Partially say      Partially      Generally      Disagree

- 4) I am very concerned of the prices.

7            6            5            4            3            2            1

Strongly Agree      Agree      Can't say      Disagree      Disagree      Strongly

Agree      Generally      Partially say      Partially      Generally      Disagree

- 5) When incentives are offered, I feel that I am getting a good deal.

7            6            5            4            3            2            1

Strongly Agree      Agree      Can't say      Disagree      Disagree      Strongly

Agree      Generally      Partially say      Partially      Generally      Disagree

- 6) I often buy things simply because they have incentive offers.

7            6            5            4            3            2            1

Strongly Agree      Agree      Can't say      Disagree      Disagree      Strongly

Agree      Generally      Partially say      Partially      Generally      Disagree

- 7) I am willing to spend extra time shopping in order to get the cheapest possible price on goods of like quality.

7            6            5            4            3            2            1

Strongly Agree      Agree      Can't say      Disagree      Disagree      Strongly

Agree      Generally      Partially say      Partially      Generally      Disagree

- 8) I enjoy using incentives regardless of the amount, I save by doing so.

7            6            5            4            3            2            1

Strongly Agree      Agree      Can't say      Disagree      Disagree      Strongly

Agree      Generally      Partially      say      Partially      Generally      Disagree

- 9) From the following what would you prefer?

- Incentives.
  - Product must cost less by the amount of incentive offered.

## SECTION "A"



If yes, what was the incentive offered.

- 4) In selecting from many types and brands of Detergent Powder available in the market you would say that,

I would not care to 1 2 3 4 5 6 7 I would care a great deal  
which one I buy as to which one I buy

- 5) Do you think that the various types and brands of Detergent Powder available in the market are all.

Very alike 1 2 3 4 5 6 7 Different

- 6) I often take advantage of incentives offered on the products.

7                  6                  5                  4                  3                  2                  1

	Strongly Agree	Agree	Can't say	Disagree	Disagree Strongly	
Agree	Generally	Partially	say	Partially	Generally	Disagree

7) In making the selection of Detergent Powder, how concerned you are about the premium offered with the product.

Not at all concerned 1 2 3 4 5 6 7 Very much concerned

8) While differentiating the Detergent Powder, how much weightage will you give to the following factors while taking the final purchase decision?

- Brand name 1 2 3 4 5 6 7
- Product Quality 1 2 3 4 5 6 7
- Premium offers 1 2 3 4 5 6 7
- Style 1 2 3 4 5 6 7
- Price 1 2 3 4 5 6 7
- Product specification 1 2 3 4 5 6 7

9) I am ready to wait for the Detergent Powder with incentive offer but is not available with the retailer.

7	6	5	4	3	2	1
Strongly Agree	Agree	Agree	Can't say	Disagree	Disagree	Strongly Disagree
Generally Agree	Generally Partially Agree	Partially say	Partially say	Generally Disagree	Generally Disagree	Disagree

10) What do you feel about the incentives offered on a Detergent Powder?

- Essential 1 2 3 4 5 6 7 Not essential
- Beneficial 1 2 3 4 5 6 7 Not beneficial
- Not needed 1 2 3 4 5 6 7 Needed
- I do not find it pleasurable 1 2 3 4 5 6 7 I find it pleasurable
- Unexciting 1 2 3 4 5 6 7 Exciting
- Fun 1 2 3 4 5 6 7 Not fun

- 11) I would not buy a particular Detergent Powder if it does not have any incentive offer.

7            6            5            4            3            2            1

Strongly	Agree	Agree	Can't	Disagree	Disagree	Strongly
Agree	Generally	Partially	say	Partially	Generally	Disagree

SECTION "B"

- 1) Do you consume Tooth Paste? YES/NO

2) If yes, which brand of Tooth Paste do you use?

---

3) Have you bought your Tooth Paste (recently) in any incentive offered by the company?

If yes, what was the incentive offered

- 4) In selecting from many types and brands of Tooth Paste available in the market you would say that,

I would not care to 1 2 3 4 5 6 7 I would care a great deal

which one I buy as to which one I buy

- 5) Do you think that the various types and brands of Tooth Paste available in the market are all,

Very alike 1 2 3 4 5 6 7 Different

- 6) I often take advantage of incentives offered on the products.

7                  6                  5                  4                  3                  2                  1

Strongly Agree Agree Can't Disagree Disa

Strongly Agree Agree Can't Disagree Disagree Strongly

Agree      Generally      Partially      say      Partially      Generally      Disagree

- 7) In making the selection of Tooth Paste, how concerned you are about the premium offered with the product.

Not at all concerned    1    2    3    4    5    6    7    Very much concerned

- 8) While differentiating the Tooth Paste, how much weightage will you give to the following factors while taking the final purchase decision?

➤ Brand name	1	2	3	4	5	6	7
➤ Product Quality	1	2	3	4	5	6	7
➤ Premium offers	1	2	3	4	5	6	7
➤ Style	1	2	3	4	5	6	7
➤ Price	1	2	3	4	5	6	7
➤ Product specification	1	2	3	4	5	6	7

- 9) I am ready to wait for the Tooth Paste with incentive offer but is not available with the retailer.

7                6                5                4                3                2                1

Strongly Agree	Agree	Agree	Can't say	Disagree	Disagree	Strongly Agree
	Generally	Partially		Partially	Partially	Generally

- 10) What do you feel about the incentives offered on a Tooth Paste?

➤ Essential	1	2	3	4	5	6	7	Not essential
➤ Beneficial	1	2	3	4	5	6	7	Not beneficial
➤ Not needed	1	2	3	4	5	6	7	Needed
➤ I do not find it	1	2	3	4	5	6	7	I find it pleasurable

Pleasurable

➤ Unexciting	1	2	3	4	5	6	7	Exciting
➤ Fun	1	2	3	4	5	6	7	Not fun

11) I would not buy a particular Tooth Paste if it does not have any incentive offer.

7            6            5            4            3            2            1  
Strongly Agree      Agree      Agree      Can't say      Disagree      Disagree      Strongly  
Agree      Generally      Partially say      Partially      Generally      Disagree

\*\*\*\*\*

**BIBLIOGRAPHY**

- Belch, George E., Belch, Michael A., (3<sup>rd</sup> edition 1995), Introduction to Advertising and Promotion: An integrated Marketing Communication Perspective, Chicago: Irwin
- Charles W. Lamb, Joseph H. Hair, Carl McDaniel, (1992), Principles Of Marketing, Cincinnati: South Western Publishing Co.
- Kotler, Philip, (9<sup>th</sup> edition, February 1997), Marketing Management: Analysis Planning Implementation And Control, New Delhi: Prentice Hall of India
- William L. Wilkie, (3<sup>rd</sup> edition, 1994), Consumer Behavior, New York: John Wiley & Sons.
- Schiffman, Leon G., Kanuk, Leslie Lazar, (5<sup>th</sup> edition, July 1996), Consumer Behavior, New Delhi: Prentice Hall of India.
- Study Material of IGNOU for MS – 61 Consumer Behavior and Marketing Research.
- William O. Bearden, Richard G. Netemeyer, Mary F. Mobley, (1993), Handbook of Marketing Sales: Multi Item Measures for Marketing and Consumer Behavior Research, Newbury Park: SAGE Publications.
- Paul Hague, Peter Jackson, (1<sup>st</sup> edition), Market Research, Kogan Page.
- David J. Luck, Ronald S. Rubin, (7<sup>th</sup> edition 1994), Market Research, New Delhi: Prentice Hall of India.

- Richard I. Levin, David S. Rubin, (6<sup>th</sup> edition), Statistics for management, New Delhi: Prentice Hall of India.
  
- Gupta S.P., (1<sup>st</sup> edition), Statistical Methods, New Delhi: Sultan Chand & Sons.