# Brand Loyalty of Cold-Drinks and Its Socio Economic and Demographic Determinants.

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## Abstract
*Brand Loyalty is the tendency of consumers to continuously buying the same brand of goods or products. Loyalty is extremely beneficial to marketers in today's competing world. Socio-economic and demographic considerations of brand loyalty is also an important factors of marketers. This paper aims at investigating how brand loyalty to non-diet cold drinks varies with respect to different demographic and socio-economic factors of households in Guwahati city, Assam. Some socio-economic factors are important due to some suspected loyalty influencing factors of households. Binary logistic regression model has been used to examine the effect of socio-economic and demographic factors on brand loyalty due to different brand loyalty influencing factors. The study discloses some impacts of socio-economic and demographic determinants on brand loyalty.*
***Key words:*** *Brand loyalty, demographic and socio economic factors, repeat purchases*

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## I.   Introduction
Brand Loyalty is the tendency of consumers to continue buying the same brand of goods rather than competing brands. It is the tendency of consumers to continuously purchase one brand products over another. Loyalty is extremely beneficial to business as it leads to repeat purchases by consumers, higher revenues and customer referrals. Socio-economic and demographic considerations of brand loyalty is also an important factors of marketers. Here, we investigate how brand loyalty to non-diet cold drinks varies with respect to different demographic and socio-economic factors of households in Guwahati city, Assam.

The present work is carried out in the lines of (Brown 1952),  (Jacoby and Chestnut 1978),  (Aaker 1991) , (Das and Suneeli 2013).

## II.   Objectives
The specific objectives of this paper are
- To evaluate brand loyalty of cold drinks.
- To assess the determinants of brand loyalty of cold drinks with respect to probable factors influencing Brand Loyalty.

## III. Methodology
The study has been carried out in Guwahati city, Assam. Data used under this study is primary in nature. Primary data are collected through well structured questionnaire which   had bought different brands of cold drinks used by teenagers and adults in the households in the year 2016 and prior to July 2017. Binary logistic regression model has been used to examine the effect of socio-economic and demographic factors on brand loyalty due to different reasons, viz., price of the product, availability in the market, quality of the product, taste of the product, satisfaction of brand, brand trust and repetition of followers etc. The effect of brand loyalty determinants of cold drinks for teenagers and adults has been measured separately because the choices of brands differ by the teenagers and adults. In our study we use one method to measure brand loyalty as suggested by Mellens et. al (1966)  in which loyalty is determined by fraction of repeat buyers.

Binary logistic regression model is used to estimate the probability of a binary response based on one or more predictors or independent variables.

Let Y be a binary response variable, $Y_i = 1$ if the household is loyal to the brand
$$= 0 \text{ otherwise.}$$
$X = (X_1, X_2, X_3 \ldots X_k)$ be a set of explanatory variables which can be discrete or continuous.
The logistic regression model is
$$\pi_i = P_r(Y_i = 1/ X_1 = x_1, X_2 = x_2, \ldots, X_{K=} x_K)$$
$$= \exp(\beta_0 + \beta_1 x_i)/ 1 + \exp(\beta_0 + \beta_1 x_1 + \beta_2 x_2 + \ldots + \beta_K x_K)$$

The login transformation is

$$\text{Logit}(\pi_i) = \log(\pi_i)$$
$$= \beta_0 + \beta_1 x_{1i} + \beta_2 x_{2i} + \ldots + \beta_k x_{ki}$$

Thus, the general form of the logit model is

$$\text{Log}(\pi_i) = \beta_0 + \beta_1 x_{1i} + \beta_2 x_{2i} + \ldots + \beta_k x_{ki} + U_i$$

Where $\pi_i = \frac{Pi}{1-Pi}$ ; Pi = Prob $(Y_i=1)$

In our context, $P_i$ = Prob $(Y_i =1)$ = Prob. that a household is loyal to a particular item. No of explanatory variables = 5, they are: $X_1$ = 1, if Income of the Head of the household is up to

5 lakh
= 0 , otherwise

$X_2$ =1, if the family belongs to general caste
= 0, otherwise

$X_3$=1, if Head of the household is below graduate level
= 0, otherwise

$X_4$= No. of male members

$X_5$= No. of female members.

The parameters are obtained by method of MLE.

## IV. Results And Analysis:

Considering the different brands of cold drinks used by teenagers and adults, teenagers (19.1%) preferred soft drink (Coca-Cola) and adults (17.9%) preferred fruit juice (Mango maza) which are greater than other brands of cold drinks. The interpretation made based on **Table 4.1 and Table 4.2.**

**Table 4.1: Different percentages of brands of cold drinks used by Teenagers**

| Brand | Valid Percent | Cumulative Percent |
|---|---|---|
| Pepsi | 14.6 | 14.6 |
| Coca Cola | 19.2 | 33.7 |
| Sprite | 14.9 | 48.7 |
| Fanta | 12.2 | 60.9 |
| Limca | 14.2 | 75.1 |
| Mango Mazza | 12.5 | 87.6 |
| Mango Slice | 5.9 | 93.6 |
| Frooty | 6.1 | 99.7 |
| Tropicana | 0.1 | 99.8 |
| Others | 0.2 | 100 |

**Table 4.2: Different percentages of brands of cold drinks used by Adults**

| Brand | Valid Percent | Cumulative Percent |
|---|---|---|
| Pepsi | 12.7 | 12.7 |
| Coca Cola | 16.3 | 29 |
| Sprite | 13.1 | 42.1 |
| Fanta | 12.7 | 54.8 |
| Limca | 12.7 | 67.5 |
| Mango Mazza | 18.1 | 85.6 |
| Mango Slice | 5.5 | 91.1 |
| Frooty | 7.7 | 98.8 |
| Tropicana | 0.2 | 99 |
| Potanjoli | 0.2 | 99.2 |
| Others | 0.8 | 100 |

Referring to the **Table 4.3** it is observed that the loyalty to cold drinks due to the factor "price of the product" for two educational levels of head of the household's teenagers belonging to below graduate levels are more loyal than graduate and above level. The confidence interval indicates that the odds ranges from 1.987 times to 16.479 times with 95% confidence. Effect of income and caste on brand loyalty for teenagers due to price of the product is not statistically significant.

**Table 4.3: Impact of socio economic and demographic variables on brand loyalty for teenagers due to price of the product**

| | B | S.E. | df | P value | Odds ratio | 95.0% C.I.for odds ratio | |
| --- | --- | --- | --- | --- | --- | --- | --- |
| | | | | | | Lower | Upper |
| Annual income (up to 5 lakhs) | -0.014 | 0.305 | 1 | 0.964 | 0.986 | 0.542 | 1.794 |
| Caste(general) | -0.603 | 0.408 | 1 | 0.139 | 0.547 | 0.246 | 1.217 |
| Education head (below graduate) | 1.744 | 0.54 | 1 | 0.001 | 5.722 | 1.987 | 16.479 |
| Constant | | 0.536 | 1 | 0.001 | 6.274 | | |

**Table 4.4:  Impact of socio economic and demographic variables on brand loyalty for adults due to price of the product**

| | B | S.E. | df | P value | Odds ratio | 95.0% C.I.for odds ratio | |
| --- | --- | --- | --- | --- | --- | --- | --- |
| | | | | | | Lower | Upper |
| Annual income (up to 5lakhs) | -0.425 | 0.267 | 1 | 0.111 | 0.654 | 0.388 | 1.103 |
| Caste(general) | -0.723 | 0.26 | 1 | 0.005 | 0.485 | 0.291 | 0.808 |
| Education head (below graduate) | 0.959 | 0.278 | 1 | 0.001 | 2.61 | 1.512 | 4.504 |
| Constant | | 0.426 | 1 | 0.426 | 0.713 | | |

It has been observed from **Table 4.4** that loyalty to fruit juice due to "price of the product", adults belonging to below graduate level are loyal than that of graduate category. The odds for that group are ranges from 1.512 times to 4.504 times with 95% confidence. The adults of reserved category are more loyal than general category. There is no effect on different income groups for choosing the different brands of cold drinks.

From **Table 4.5** it is noticed that the loyalty for teenagers and adults due to the factor "Availability in the market" teenagers belonging to below graduate levels are more loyal than graduate and above group. The confidence interval for teenagers indicates that the odd for below graduate category is ranges from 4.477 times to 78.763 times with 95%`confidence.  There is no effect of households of different categories of income and caste on loyalty for teenagers.

**Table 4.6** indicates that adults of below graduate level are more loyal than graduate and above level. The odd for adults is ranges from 1.641 times to 4.931 times with 95% confidence. Adults belongs to reserved category are more loyal in comparison to others. It also indicates that Annual incomes of adults have no effect on brands.

**Table 4.5: Impact of socio economic and demographic variables on brand loyalty for teenagers due to "Availability in the market"**

| | B | S.E. | df | P value | Odds ratio | 95.0% C.I.for odds ratio | |
| --- | --- | --- | --- | --- | --- | --- | --- |
| | | | | | | Lower | Upper |
| Annual income (up to 5lakhs) | 0.087 | 0.288 | 1 | 0.763 | 1.091 | 0.62 | 1.918 |
| Caste(general) | -0.789 | 0.403 | 1 | 0.05 | 0.454 | 0.206 | 1 |
| Education head (below graduate) | 2.933 | 0.731 | 1 | <.01 | 18.779 | 4.477 | 78.763 |
| Constant | | 0.52 | 1 | 0.046 | 2.824 | | |

**Table 4.6: Impact of socio economic and demographic variables on brand loyalty for Adults due to Availability in the market**

| | B | S.E. | df | P value | Odds ratio | 95.0% C.I.for odds ratio | |
|---|---|---|---|---|---|---|---|
| | | | | | | Lower | Upper |
| Annual income (up to 5lakhs ) | -0.116 | 0.266 | 1 | 0.663 | 0.89 | 0.528 | 1.5 |
| Caste(general) | -1.128 | 0.267 | 1 | <.01 | 0.324 | 0.192 | 0.546 |
| Education head (below graduate) | 1.045 | 0.281 | 1 | <.01 | 2.845 | 1.641 | 4.931 |
| Constant | | 0.424 | 1 | 0.224 | 0.597 | | |

**Table 4.7: Impact of socio economic and demographic variables on brand loyalty for teenagers due to Satisfaction of brand**

| | B | S.E. | df | P value. | Odds ratio | 95.0% C.I.for odds ratio | |
|---|---|---|---|---|---|---|---|
| | | | | | | Lower | Upper |
| Annual income (up to 5 lakhs) | 0.099 | 0.29 | 1 | 0.732 | 1.105 | 0.625 | 1.951 |
| Caste(general) | -0.786 | 0.4 | 1 | 0.049 | 0.456 | 0.208 | 0.998 |
| Education head (below graduate) | 2.925 | 0.731 | 1 | <.01 | 18.638 | 4.444 | 78.169 |
| Constant | | 0.513 | 1 | 0.009 | 3.821 | | |

For choosing the different brands of cold-drinks, **Table 4.7** indicates that teenagers belonging to reserved category (caste) are more loyal to that of general category for the factor "Satisfaction of brand". The odds for general category is ranges from 0.208times to 0.998 times at 95% confidence. As regards to the education of head of the households teenagers belonging to below graduate groups are more loyal in comparison to graduate and above level. The confidence interval indicates that odds for below graduate level is ranges from 4.44 times to 78.169 times at 95% confidence. Other variables are statistically not significant.

From **Table 4.8 ,** it is observed that adults belonging to below graduate level are more loyal to that of graduate and above group for choosing fruit juice .The confidence interval indicates that odds is ranges from 2.366 times to 7.609 times with 95% confidence. There is no effect of income of customers (adults) on brand loyalty for satisfaction of brand. Adults belongs to reserved category are more loyal than others for choosing a particular brand.

**Table 4.8 Impact of socio economic and demographic variables on brand loyalty for adults due to Satisfaction of brand**

| | B | S.E. | df | P value | Odds ratio | 95.0% C.I.for odds ratio | |
|---|---|---|---|---|---|---|---|
| | | | | | | Lower | Upper |
| Annual income (up to 5 lakhs) | -0.343 | 0.271 | 1 | 0.205 | 0.709 | 0.417 | 1.207 |
| Caste(general) | -1.013 | 0.273 | 1 | <.01 | 0.363 | 0.213 | 0.62 |
| Education head (below graduate) | 1.445 | 0.298 | 1 | <.01 | 4.243 | 2.366 | 7.609 |
| Constant | | 0.442 | 1 | 0.121 | 0.504 | | |

From the **Table 4.9** while considering the loyalty for "Brand trust' it is observed that education of households has effect on teenagers. Teenagers belonging below graduate category are more loyal to that of graduate and above group. The confidence interval of the odds for below graduate level is (1.512, 8.142) times with 95% confidence. Teenagers and adults of reserved category are more loyal than general category (**Table 4.9 and Table 4.10**).

Referring to the **Table 4.10** it is observed that adults for choosing fruit juice are affected only by education of the head of the households and adults of below graduate level are more loyal to that of graduate and above level. The confidence interval of the odds for below graduate level is (1.176, 3.29) times with 95% confidence.

**Table 4.9: Impact of socio economic and demographic variables on brand loyalty for teenagers due to Brand trust**

| | B | S.E. | df | P value | Odds ratio | 95.0% C.I.for odds ratio | |
|---|---|---|---|---|---|---|---|
| | | | | | | Lower | Upper |
| Annual income (up to 5lakhs) | -0.161 | 0.297 | 1 | 0.587 | 0.851 | 0.475 | 1.524 |
| Caste(general) | -0.961 | 0.433 | 1 | 0.027 | 0.383 | 0.164 | 0.894 |
| Education head (below graduate) | 1.255 | 0.429 | 1 | 0.003 | 3.509 | 1.512 | 8.142 |
| Constant | | 0.551 | 1 | 0 | 9.774 | | |

**Table 4.10: Impact of socio economic and demographic variables on brand loyalty for adults due to" Brand trust"**

| | B | S.E. | df | P value | Odds ratio | 95.0% C.I.for odds ratio | |
|---|---|---|---|---|---|---|---|
| | | | | | | Lower | Upper |
| Annual income (up to 5 lakes) | -0.23 | 0.26 | 1 | 0.376 | 0.795 | 0.478 | 1.322 |
| Caste(general) | -0.648 | 0.246 | 1 | 0.008 | 0.523 | 0.323 | 0.847 |
| Education head (below graduate) | 0.677 | 0.263 | 1 | 0.01 | 1.968 | 1.176 | 3.292 |
| Constant | | 1 | 0.13 | 0.541 | | | |

**Table 4.11: Impact of socio economic and demographic variables on brand loyalty for teenagers due to" Taste of the product"**

| | B | S.E. | df | P value | Odds ratio | 95.0% C.I.for odds ratio | |
|---|---|---|---|---|---|---|---|
| | | | | | | Lower | Upper |
| Annual income (up to 5 lakes) | 0.957 | 0.357 | 1 | 0.007 | 2.605 | 1.294 | 5.243 |
| Caste(general) | -0.529 | 0.455 | 1 | 0.245 | 0.589 | 0.241 | 1.438 |
| Education head (below graduate) | 1.998 | 0.62 | 1 | 0.001 | 7.372 | 2.188 | 24.845 |
| Constant | | 0.594 | 1 | 0.223 | 2.061 | | |

**Table 4.11** and **Table 4.12** indicates that the loyalty to different brand of cold drinks due to "Taste of the product" teenagers belonging to income group "up to 5lakhs" are more loyal than that of "more than 5lakhs" group. The odds for that group are ranges from 1.294times to 5.243 times at 95% confidence. Teenagers belonging to below graduate levels of head of the households are more loyal than graduate and above level. The confidence interval of the odds for below graduate level is (2.188, 24.845) times at 95% confidence. Also for adults education have effect on brand loyalty. Adults belonging to below graduate and reserved category are more loyal than that of graduate and above and general category respectively. The confidence interval of the odds for below graduate level is (1.325, 5.647) times at 95% confidence. Other factors are not significant for brands due to taste of the product.

**Table 4.12: Impact of socio economic and demographic variables on brand loyalty for adults due to "Taste of the product"**

| | B | S.E. | df | P value | Odds ratio | 95.0% C.I.for odds ratio | |
|---|---|---|---|---|---|---|---|
| | | | | | | Lower | Upper |
| Annual income (up to 5 lakhs) | -0.484 | 0.323 | 1 | 0.133 | 0.616 | 0.327 | 1.159 |
| Caste(general) | -1.498 | 0.405 | 1 | <.01 | 0.224 | 0.101 | 0.495 |
| Education head (below graduate) | 1.006 | 0.37 | 1 | 0.006 | 2.736 | 1.325 | 5.647 |
| Constant | | 0.589 | 1 | 0.003 | 5.798 | | |

Referring to the **Table4.13 and Table4.14** it is observed that education of head of the households has effect on loyalty to teenagers for selecting the different brands of cold drinks due to "Quality of the product". Teenagers belonging to below graduate levels are more loyal than graduate and above level. The confidence interval of the odds for below graduate level is (2.56, 28.09 ) times at 95% confidence. Also teenagers of reserved category are more loyal than that of general category. The confidence interval for general category is (0.173, 0.973) times at 95% confidence. The factor annual income is not statistically significant for both teenagers and adults. Education of adult customers has no effect on brand loyalty.

**Table 4.13: Impact of socio economic and demographic variables on brand loyalty for teenagers due to Quality of the product**

| | B | S.E. | df | P value | Odds ratio | 95.0% C.I.for odds ratio | |
|---|---|---|---|---|---|---|---|
| | | | | | | Lower | Upper |
| Annual income (up to 5lakhs) | 0.173 | 0.308 | 1 | 0.573 | 1.189 | 0.651 | 2.174 |
| Caste(general) | -0.891 | 0.441 | 1 | 0.043 | 0.41 | 0.173 | 0.973 |
| Education head (below graduate) | 2.138 | 0.611 | 1 | <.01 | 8.481 | 2.562 | 28.079 |
| Constant | | 0.558 | 1 | 0.001 | 5.936 | | |

**Table 4.14: Impact of socio economic and demographic variables on brand loyalty for adults due to Quality of the product**

| | B | S.E. | df | P value | Odds ratio | 95.0% C.I.for odds ratio | |
|---|---|---|---|---|---|---|---|
| | | | | | | Lower | Upper |
| Annual income (up to 5lakhs) | 0.421 | 0.265 | 1 | 0.112 | 1.523 | 0.907 | 2.559 |
| Caste(general) | -1.047 | 0.274 | 1 | 0 | 0.351 | 0.205 | 0.6 |
| Education head (below graduate) | 0.303 | 0.28 | 1 | 0.279 | 1.354 | 0.783 | 2.343 |
| Constant | | 0.42 | 1 | 0.738 | 0.869 | | |

**Table 4.15: Impact of socio economic and demographic variables on brand loyalty for teenagers due to Repetition of followers**

| | B | S.E. | df | P value | Odds ratio | 95.0% C.I.for odds ratio | |
|---|---|---|---|---|---|---|---|
| | | | | | | Lower | Upper |
| Annual income (up to 5 lakes) | 0.421 | 0.265 | 1 | 0.112 | 1.523 | 0.907 | 2.559 |
| Caste(general) | -1.047 | 0.274 | 1 | 0 | 0.351 | 0.205 | 0.6 |
| Education head (below graduate) | 0.303 | 0.28 | 1 | 0.279 | 1.354 | 0.783 | 2.343 |
| Constant | | 0.42 | 1 | 0.738 | 0.869 | | |

While considering the loyalty due to "Repetition of followers" it is founded from the **Table4.15** that education and income have no effect on teenagers for choosing a particular brand. Teenagers of reserved category are more loyal than that of general category. The confidence interval for general category is (0.205, 0.6) times at 95% confidence.

**Table 4.16: Impact of socio economic and demographic variables on brand loyalty for adults due to" Repetition of followers"**

| | B | S.E. | df | P value | Odds ratio | 95.0% C.I.for odds ratio | |
|---|---|---|---|---|---|---|---|
| | | | | | | Lower | Upper |
| Annual income (up to 5 lakhs) | -0.835 | 0.269 | 1 | 0.002 | 0.434 | 0.256 | 0.735 |
| Caste(general) | -0.959 | 0.229 | 1 | <.01 | 0.383 | 0.245 | 0.6 |
| Education head (below graduate) | 0.668 | 0.255 | 1 | 0.009 | 1.951 | 1.184 | 3.215 |
| Constant | | 0.369 | 1 | 0.06 | 0.499 | | |

Regarding the adult customer **Table 4.16** indicates that customers belonging to income group "more than5lakhs" are loyal to that of "up to 5lakhs" group. The confidence interval of odds for income group "upto5lakhs" is (0.256, 0.735) times at 95% confidence. The reserved category of caste and below graduate category are more loyal than that of general and "graduate and above" category respectively. The confidence interval of the odds for general category is (0.245, 0.6) times at 95% confidence and the odds for below graduate is (1.184 , 3.215) times at 95% confidence.

## V. Conclusions:

It has been observed from the study that the educational status is an important component of brand loyalty of cold drinks. Some of the major findings are:

- Considering the factor "Price of the product "it is observed that the educational status is a determinant of brand loyalty for both teenagers and adults. The Households having maximum qualification below graduate are more loyal to the product than others. On the other hand among the proposed determinants income and caste have no impact on brand loyalty of cold drinks.
- For "Availability in the market" considering the educational level of households, customers belonging to below graduate level are more loyal than graduate and above level for both teenagers and adults.
- In case of "Satisfaction of brand" educational level viz. below graduates are more loyal for teenagers and adults. Teenagers and adults of general category are less loyal compared to others.
- Considering the factor "Brand trust" both teenagers and adults of educational level viz. below graduates are more loyal than others. General category of both teenagers and adults are less loyal compared to others.
- For factor "Taste of the product" teenagers belonging to" income group (up to5lakhs) and both teenagers and adults of educational level viz. below graduates are more loyal than others. Only male adults have impact on loyalty due taste of the product.
- In case of "Quality of the product" teenagers of below graduates and both of reserved categories are more loyal compared to others. Income has no impact on loyalty for both teenagers and adults.
- While considering the factor "Repetition of the followers" adults belonging to income group "more than5lakhs", caste of reserved category and educational level viz. below graduates are more loyal than others. Education and income has no effect on loyalty.

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