

## FACTORS INFLUENCING BUYING INTENTION OF YOUTH TOWARDS THE SUGAR FREE PRODUCTS

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**Abstract:** The paper focus on the causal factors that influence buying intention of sugar free products by youth in India. The study has been conducted in an International University in India among the youth in the age group of 15-40 to elicit the factors that play a positive role in the formation of buying intention of sugar free products. The primary study has been done with the help of a questionnaire after doing a rigorous literature review. The study has considered five influencing factors such as 'perception, attitude, health reason, healthy lifestyle, and knowledge' as independent variables and the buying intention as dependent variable. We applied the regression analysis to establish the relationship between influencing factors and the buying intention. Only one independent factor out of five has been found significant in influencing the buying intention of sugar free products. The study has also found that there is no gender difference among the five influencing factors and the buying intention of sugar free products.

**Keywords:** Sugar free products, Buying intention, Knowledge, Attitude, Perception, Healthy lifestyle

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### Introduction

The reputed heart and diabetes bodies in the U.S have allowed the use of sugar free products to replace table sugar to attack obesity, diabetes, metabolic syndrome and other risks connected with the heart problems (Strawbridge, 2012). As per FDA, the definition of "sugar-free" is that if any food contains less than 0.5 grams for each serving is considered as sugar free.

Sugar is actually a carbohydrate that is converted into glucose which again turns into energy after joining the blood. Body needs energy but the overall health depends on what type of sugar one is consuming, whether it is processed or natural. The processed sugar joins the blood stream faster and subsequently one's insulin level goes up according to the level of intake. The classic white sugar that we use everyday actually comes from sugar cane, which is again processed into syrup. The naturally occurred sugar from fruits, diary, vegetables, roots, etc. do not do any harm to the human body. The natural sugars also accompanied with fiber reduces the sugar flow into the blood stream hence a natural controller of insulin. The added sugars and the processed one may create health issues if consumption crosses a limit.

There are four types of sugars available in the market. Fructose is a natural sugar that is available in fruits. Fructose being a natural sugar comes from various types of fruits have

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sufficient fiber and nutrition. The table sugar which is available in the form of Sucrose is a processed sugar. Sucrose is a compound where glucose and fructose are equally combined through a chemical process. The sugar in the blood is considered as glucose. The high fructose corn syrup, commonly called as HFCS, is an artificial syrup made out of corn starch. The combination of glucose and fructose vary from 42-58 percent to manufacture HFCS. HFCS is not good for health and creates abnormal conditions in human metabolism that leads to health complications.

*The four types of sugars that are to be defined for clear understanding so as to understand the meaning of sugar-free products. Since, sugar intake creates the health issues, people are looking for an alternative in the form of sugar substitutes. A sugar substitute provides less energy but gives the needed sweetness. Sugar substitutes are available at low-calorie level and some sugar substitutes even good at offering zero-calorie. The sugar substitutes that offer zero-level calorie are called as sugar-free products. The sugar-free products are actually artificial sweeteners that are available in the form of sucralose, aspartame, saccharin, etc. The artificial sweeteners are also used to enhance the flavor along with sugar-free composition.*

**Importance of sugar free products:** Some of the responses given by customers in the study briefly includes the following phrases.

- Lower risk of disease and illness
- Craving and hunger under control
- Enhance energy and reduce sluggishness
- Increase mental capacity and clarity
- More brightness in appearance
- Weight Management and maintenance
- Better Dental healthcare
- Avoid allergens
- Feel better now

## Literature Review

The research studies on sugar free products give different results across countries. The research (Messinal, 2004) studies the “beliefs and attitudes towards the consumption of sugar-free products in a sample of Italian adolescents”. The sample includes 10 secondary public school of Italy which include a random sample of 233 adolescents, aged 15-21yrs where only 224 agreed to participate. The respondent of this sample seemed to be fairly undefined about their response and absence of fundamental relationship with their lifestyle factors (attitude and belief) and buying of sugar-free goods. In the conclusion of the report it states that the goal of additional research focused at examining lifestyle factors towards sugar-free products must be tailor-made according to the purchase quantity of sugar-free products so as to indicate a particular group of consistent buyers with more quantity of buying sugar-free products. The study (Hye-Jong Yoo, 2017) led to find out the attitude and perception of children and youths towards sugar free in dairy products. The sample taken was of 646 youths including children. The outcome of the study shows that there is an inverse relationship between attitude and level of sugar i.e. the optimistic attitude and sugar-less go together.

Another study (Mahshid, 2000) done in the US. The motivation behind the investigation of “The Correlation between Nutrition Knowledge and Eating Behavior in an American School: The Role of Ethnicity” was to inspect the connection between sustenance information and eating conduct of an example of center younger students. The members were 532 understudies in the 6<sup>th</sup>, 7<sup>th</sup>, and 8<sup>th</sup> grades from the American School in Ohio. The understudies completed the survey that estimated the positive relationship between nourishment information and eating behavior.

The Indian study on sugar free products (Mittal, 2012) elicited consumer behavior in the NCR region. The primary objective of the research titled “Consumer Behavior Towards Food: A Study of Sugar Free Products” was to study the “Acceptance level of Consumers towards Sugar Free Products” and also to find out the reason for the inclination towards sugar free products and changing preferences toward health-conscious attitude of the people. The sample of 150 people from different zones of Delhi (NCR) were taken, it used primary (such as structured questionnaire and secondary (newspaper, magazines and internet) method for data collection. The findings shows that the sugar free products was assumed a greater significance in the present day environment and mainly consumed by the people above the age group of 40. The reason was increased health concern of the people which led to changing the mindsets of the people towards the sugar free products and the factor was healthy, price and quality of the product.

The other studies (Barker et al, 2000; Wardle and Marsland, 1990; Hill, 1993) focused on the influence of lifestyle on the dieting practices. The adolescent group focused on change of body weight and body shape through right dieting habits. The identified reasons are due to health issues, expecting a socially acceptable slim body shape and a flexible body structure. The dieting practice is more visible among teenagers. The female gender is more influenced by dieting practices but the impact is very high in female teenagers.

The other study (Raychaudhuri, 2011) on “Artificial sweeteners – a review”, explains about the relationship between sugar intake and its impact on human health in terms of obesity, heart issues, hypertension and diabetes over the years. The intake of sugar in food products, soft drinks, dishes like sweets, beverages, etc. have raised doubts on fitness issues among consumers. The usage of artificial sweeteners among beverages and other food items has created more attention among the health-conscious individuals. People are looking for various alternative products that provide nourishment with sugar free content for zero calorie. Companies that are in nourishment industry are using various counterfeit sugars with low or zero calorie content in place of unhealthy sugar to produce sugar free products. U.S. Nourishment and Medication Administration have permitted artificial sugars such as aspartame, acesulfame, neotame, cyclamate and alitame for use in food and beverages.

The UK study on white ethnic group (Rawahi, 2018) on “Factors related to reducing free sugar consumption among white ethnic grown-ups in the UK: a qualitative study” was a noteworthy. The aim of this study was to discover the blocks and enablers to behavioral change to decrease sugar free intake related to dental care in a sample of UK grown-ups aged 18 and above years who identify themselves as white ethnic group. This breadth of the COM-B model and the TDF spaces has authorized the examination to catch a bigger number of components identified with free sugar admission than have been accounted for by past studies. They considered six components of the COM-B model and the 14 areas of the TDF spaces and how are they related to decrease sugar consumption. The 14 elements of TDF: Knowledge; Psychological Skills; Memory, Attention, and Decision Processes; Behavioral

Regulation; Physical Skills; Social impact; Environmental setting and assets; Social and skilled job and character; Beliefs about Abilities; Beliefs about Significance; Aims and Goals; Strengthening; and Emotions.

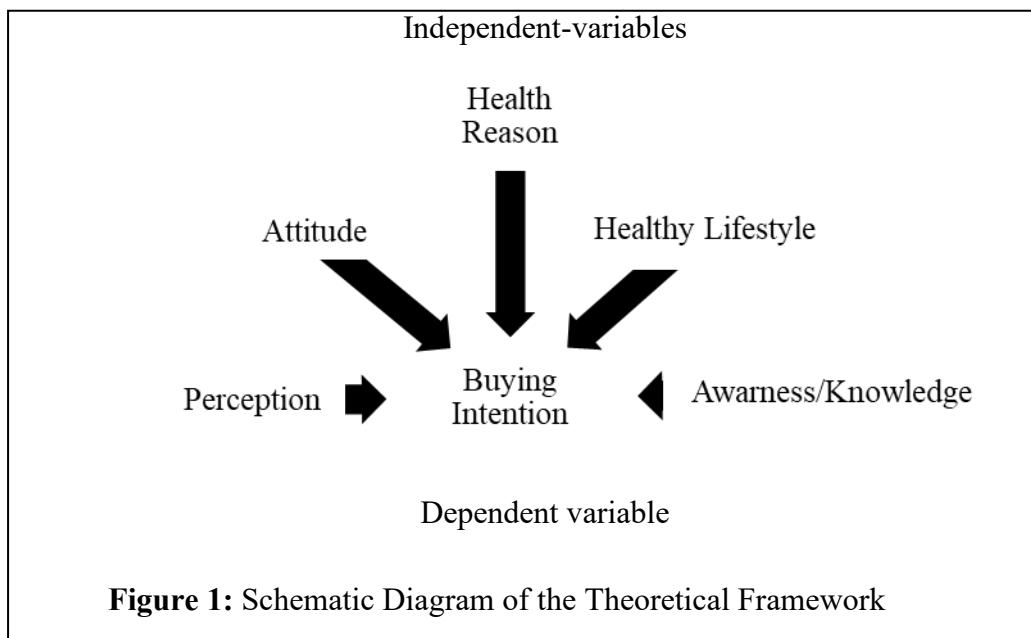
The study (Rani, 2014) on “Factor Influencing Behavior” explains the factors affecting consumer decision making process whether to make purchase or not is influenced by many factors towards any product. Purchase Intention refers to the choice of a particular product by a definitive buyer. Various elements, specificities and qualities influence the individual in the choice of brands or the retailers from where he wants to buy. The buy choice is the consequence effect of the influencing elements. A purchaser is driven by his awareness/knowledge, attitude, perception, life style while making a choice of a product. The recent study (Series, 2019) on “Understanding consumer preference for low-calorie and low-sugar products” finds that buyer enthusiasm for low-and no-sugar items is very high. Taking all things together, markets reviewed and the familiarity with the wellbeing suggestions of an additional of sugar is critical and expanding, particularly in the developing buyer markets. The ubiquity of low-and no-sugar alternatives shows that buyers still need to have the option to appreciate sweet-tasting beverages and bites despite the fact that their apparent purchasing conduct fluctuates generously per class.

The above studies proved that various factors such as awareness and knowledge about sugar free products, healthy lifestyle, health reasons, perception and attitude towards sugar free products, etc. influence buying intention and purchase decisions. These are all the causal factors or independent factors that influence the buying intention of consumers towards sugar free products.

### ***Buying intention***

The choice of a product by a consumer to buy a product will always depends on his buying intention. The buying intention of a certain product or service is always preceded by purchase decision. The buying intention also depends on so many parameters that influence a consumer's intention to buy. Consumer's buying intention is a dependent variable that depends on several external and internal independent factors. Buying intentions are a measure of the respondent's attitude towards buying a product or availing service. The buying intentions are shaped by and are reflected in the information and the knowledge levels of the consumer. The buying intention is influenced by and are related to the independent factors such as consumer behavior, his perceptions about the product, and formation of consumer attitude towards the product. The formation of purchase intention of consumers is a key point that depends on whether the consumer is able to access and evaluate the specific product in the competition with the similar type of products. The independent factors that influence the purchase intention of consumer is the primary objective of this study.

The relationship between the factors that influence purchase intention of sugar free products is developed into a theoretical framework as shown in the Figure 1. The purchase intention is the *dependent variable* whereas the five factors such as '*perception, attitude, health reason, healthy lifestyle, and awareness*' are considered as *independent variables*.



In figure 1, it is showing the relationship between dependent and independent variables. Factors influencing the buying behavior/intension of youth towards sugar free products. The purpose of the study is to test the theoretical framework on youth in an International University in India.

### **Research objective**

The research objectives of the study are as follows:

- To study the causal factors that influence the buying intention of youth towards sugar-free products in India.
- To understand the relationship between causal factors and buying intention of youth to consume sugar-free products.
- To understand the sugar-free product market in India
- To understand the influence of the gender on the factors and buying intention of sugar-free products.

### **Hypothesis**

The following hypotheses are framed based on literature as follows:

H<sub>11</sub>: The Awareness level of consumer has a positive effect on buying intention of sugar-free products.

H<sub>12</sub>: Health Reasons of consumer has a positive effect on consumer buying intention of sugar-free products.

H<sub>13</sub>: Healthy Lifestyle of consumer has a positive effect on buying intention of sugar-free products.

H<sub>14</sub>: Attitude formation of consumer has a positive effect on buying intention of sugar-free products.

H<sub>15</sub>: Perception of consumer has a positive effect on buying intention of sugar-free products

H<sub>21</sub>: There is a significant difference of Awareness levels between male and female towards sugar-free products.

H<sub>22</sub>: There is a significant difference of health reason between male and female towards sugar-free products.

H<sub>23</sub>: There is a significant difference of healthy lifestyle between male and female towards sugar-free products.

H<sub>24</sub>: There is a significant difference of attitude levels between male and female towards sugar-free products.

H<sub>25</sub>: There is a significant difference of perception levels between male and female towards sugar-free products.

H<sub>26</sub>: There is a significant difference of purchase intension levels between male and females towards sugar-free products.

### **Research methodology**

The methodology under taken in the study to see the causal factors that influence the result in the form of buying intention. The regression analysis finds the relationship between cause and effect. Hence, the study used the regression analysis to study the relationship among independent and dependent factors.

The random sampling process was used to collect the data from the students, faculty, and staff of an International University who were in the age group of 15-40. A standardized questionnaire has been developed and pilot tested before administering to the sample. The questionnaire reliability was 0.73 (Cronbach alpha) and validity tested with the expert faculty of the said International University. The data collected with the questionnaire, titled "Factors Influencing Buying Intention of Youth Towards the Sugar Free Products in an International University in India (LPU)". Both offline and Online methods were used to collect the data due to the constraint of time. The targeted population for this study was the youth of International University (LPU). The sample size was 500 for the study but only 170 actually responded to the questionnaire. The questionnaire response rate was 0.34 which was considered as a good response. The tools used to analyze the data were the SPSS and Excel. The regression analysis technique was used to know the strength of relationship between dependent and independent variables. The other statistical techniques also used such as correlation, mean, percentages, etc. to better represent the relationships and graphs also used to display the findings wherever required.

## RESEARCH FINDINGS

Respondent's profile analysis is done with percentage analysis on various parameters such as gender, age, expenses, alternatives and education level to assess the distribution of respondents. The data analysis based on descriptive statistics, Cronbach alpha, regression analysis, correlation and independent sample t-test are as follows:

- After taking the survey of 170 respondents, it is observed that there are 55.3% male and 44.7% female which shows the number of male respondents is higher.
- As per the age group, 61.8% were between age group 21-25, 22.9% were between the age group 15-20, 11.2% were between the age group 26-30 and only few percentages were between the age group 31-35 and 36-Above. The result showed that the majority of the respondents were from 21-25 age groups.
- Education level was also an important category for analysis. 51.2% were from Bachelors Level, 41.8% were Masters Level and remaining percentage is of Ph.D. and Diploma level. The result showed that the majority of respondents were in Bachelors Level.
- The respondent's marital status was found to be unmarried which is 92.9% and only 7.1% were married.
- The respondents were also categorized in accordance to their Family monthly income which showed that 50.6% had family monthly income between 1.01 L and above, 20.8%, 17.3% and 11.3% had family monthly income between 51k-1L, 20k-30k and 31k-50k respectively. The majority of respondents had family monthly income between 1.01L and above.
- Most of the respondents were found be of Indian Nationality which is 81% and 18% were found to be Nepalese and 1% of other nationality.
- Occupation was another category where majority of respondents were students which was 94% and 6% of respondents were teachers, businessman and other.
- Cronbach Alpha value was shown that the research instrument used was 73% reliable. Therefore, the questionnaire elicited reliable information from respondents. The research instrument was also validated with the experts of International University. Hence, the overall reliability and validity were found to be relevant and reliable.

Table 2.2 Correlations of Coefficient (N=170)

		Correlations					
		AK	HR	HL	A	P	BI
Awareness/Knowledge	Pearson Correlation	1.286**	.189	.187	-.020		.249**
	Sig. (2-tailed)		.000	.013	.015	.794	.001
	N	170	170	170	170	170	170
Health Reason	Pearson Correlation	.286**		.1568**	.373**	-.068	.142
	Sig. (2-tailed)	.000		.000	.000	.378	.065

		N	170	170	170	170	170	170
Healthy Lifestyle	Pearson Correlation	.189	.568**		1.440**	-.076		.217**
	Sig. (2-tailed)		.013	.000		.000	.324	.004
	N		170	170	170	170	170	170
Attitude	Pearson Correlation	.187	.373**	.440**		1.118		.214**
	Sig. (2-tailed)		.015	.000	.000		.126	.005
	N		170	170	170	170	170	170
Perception	Pearson Correlation	-.020	-.068	-.076	.118	1		.062
	Sig. (2-tailed)		.794	.378	.324	.126		.422
	N		170	170	170	170	170	170
Buying Intention	Pearson Correlation	.249**	.142	.217**	.214**	.062		1
	Sig. (2-tailed)		.001	.065	.004	.005	.422	
	N		170	170	170	170	170	170

\*. Correlation is significant at the 0.05 level (2-tailed).

- The correlation table shows that there is no high correlation between independent variables therefore one can consider them as separate and independent in their influence on dependent factor.

Table 2.3 Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
dimension1	.330 <sup>a</sup>	.109		.082
a. Predictors: (Constant), P, AK, HL, A, HR				

- The model summary from regression analysis showed that R square=0.109 which shows a weak relationship between dependent and independent variable and 10.9% of dependent variable was explained by independent variable.

Table 2.4 Coefficients

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Hypotheses
		B	Std. Error				
1	(Constant)	3.722	.891		4.180	.000	
	AK	.191	.070	.212	2.747	.007	Supported
	HR	-.031	.060	-.048	-.514	.608	Not Supported
	HL	.105	.062	.158	1.680	.095	Not Supported
	A	.108	.080	.115	1.360	.176	Not Supported
	P	.035	.042	.062	.819	.414	Not Supported
a. Dependent Variable: BI							

- Out of five variables only one variable was found to be significant. The coefficients analysis showed that there was a significant relationship between awareness/knowledge and buying intention of youth by 21.2% and there was no relationship with other independent variables which were attitude, perception, health reason and healthy lifestyle.
- In regression table the beta was .212 for awareness/knowledge which means that if there was a change in awareness the buying intention of youth towards sugar-free products would be affected by 21.2%.

Table 2.5 Independent Samples Test

Independent Samples Test										
Variables		Levene's Test for Equality of Variances			t-test for Equality of Means					
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
AK	Equal variances assumed	6.185	.014	-1.608	168	.110	-.469	.292	-1.045	.107
	Equal variances not assumed			-1.658	166.884	.099	-.469	.283	-1.028	.089
HR	Equal variances assumed	2.914	.090	-3.029	168	.003	-1.202	.397	-1.986	-.419
	Equal variances not assumed			-3.074	167.110	.002	-1.202	.391	-1.975	-.430
H	Equal variances assumed	3.902	.050	-2.925	168	.004	-1.144	.391	-1.916	-.372
	Equal variances not assumed			-2.981	167.785	.003	-1.144	.384	-1.901	-.386

	Equal variances assumed	.498	.481	-.632	168	.529	-.178	.282	-.735	.379
A	Equal variances not assumed			-.640	166.883	.523	-.178	.278	-.727	.371
	Equal variances assumed	.610	.436	1.168	168	.244	.549	.470	-.378	1.476
P	Equal variances not assumed			1.177	164.569	.241	.549	.466	-.372	1.469
	Equal variances assumed	.090	.764	-.329	168	.742	-.087	.265	-.610	.436
BI	Equal variances not assumed			-.332	164.472	.741	-.087	.263	-.607	.432

From the independent sample t-test analysis it has been found that:

- There is a significant difference of awareness levels between male and female youth towards sugar-free products.
- There is a significant difference of healthy lifestyle levels between male and female youth towards sugar-free products.
- However, there is no significant difference towards perception, health reason, attitude and buying intention level between male and female youth towards sugar-free products.

## Conclusion

Hence, it has been found that all the independent variables are not correlated and they can be treated as separate independent factors without much cross-loadings. Among the five independent factors, only one factor was having significant influence on buying intention of youth towards sugar-free products i.e. awareness/knowledge of the product. The change in dependent variable caused by independent variable i.e. awareness/knowledge due to beta coefficient is by 21.2%. From t-test analysis it showed that male and female have different level of awareness and approach towards healthy lifestyle.

Therefore, from this study it has been found that the youth are affected by awareness/knowledge of the product towards the buying intention of sugar-free products. However, other factor such as perception, attitude, healthy lifestyle and health reason are not playing important role in influencing the buying intention of this particular sample group towards sugar free products.

### **Suggestion for future research**

The study can be repeated in other international universities in India so as to understand the factors that influence buying intention of youth in India. Research methodology can be improved by integrating questionnaire study with field interviews. The questionnaire can be improved by doing further literature review and the scale can be reformulated for robust results. The study can also focus on the differences between foreign and Indian students towards sugar-free products studying in an international university.

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