

Adoption of Energy Drinks: A Cause for Concern and Social Awareness

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Abstract: *This study attempts to explore the adoption of energy drink by consumers and to find out the reasons behind adoption. We have selected students as the sample of this study for which we have conducted probability stratified sampling technique. Each semester has been considered as one stratum and ten different semester students have been chosen to construct stratum. The total 313 respondents have been drawn probabilistically from ten different semesters. Factor analysis then has been used to analyze the data and to draw the findings. From the factor analysis, it has been found that three factors namely promotional factor, distribution factor and health factor are the major influencers. These three factors have combined variance of 39.49% of the decision regarding the preference of energy drink by consumer.*

Key words: Energy drink, Consumer, Factor analysis.

1. Introduction

Socio-culturally, this country does not favor wine or whisky as a drink either. After the soft drinks boom, the market is now overloaded with various brands of energy drinks. Interestingly, though developing countries like us enjoy these drinks at present, most developed countries have already banned most energy drink brands after gaining awareness about its harmful effects. In summer, people take these drinks to mitigate their thirst and they think it would fulfill their demand of water in body. Many people choose an energy drink to power their body up. Some prefer energy drinks to water/soft drinks in order to quench their thirst. Energy drinks may temporarily boost energy levels, but they often cause a crash and ultimately can lead to drowsiness [1].

In spite of having much more negative consequences drinking these beverages, some marketers are making good profit out of it. Through this study will try to find out what kinds of forces are influencing consumers to take energy drink? The

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findings will help the policy makers of Bangladesh Government and Bangladeshi energy drink manufacturers to adjust their approach to produce such drink.

2. Literature review

Dr. Hossain R. (2011) reported that three researchers from the University of Texas Health Science Centre and the University of Queensland in Australia examined the contents of energy drink, which are sold alongside soft drinks. Their review of all the studies published recently in the Mayo Clinic Proceedings revealed that high level of caffeine, one of the major ingredients in energy drinks puts certain susceptible people at risk of dangerous, even life-threatening consequences and adversely affects on blood pressure, heart rate and brain function [2].

Dr. Hossain R. (2011) wrote that some of these energy drink products sold in Bangladesh do not list the ingredients with their amounts including caffeine. Therefore, it is hard to determine exactly how much caffeine you are consuming [2].

Islam T. (2012) wrote that people are being influenced by the attractive advertisements of several types of drinks. Most of these advertisements are posturized on their favorite stars, who act as if these drinks give them unimaginable power. The language used in these advertisements is also extremely objectionable to attract people. There is no doubt that influenced by such advertisements and while succumbing to peer pressure, people of all ages, especially the youth, are drinking energy drinks [3].

Islam T. (2012) also noted that although energy drink temporarily refreshes you and changes your mood, it has many harmful effects on your health. High amounts of caffeine are used in energy drinks which can lead to epilepsy [3].

Neil R. (2013) commented that people newly acquiring wealth in Bangladesh are always in search of enjoyment. They view that their drinking habit will help overcome their class difference. Such pull and push within society however exert an extra pressure on the young generation to emulate their elders. But limited affordability compels them to lay their hands on cheaper varieties of drinks. Quite a few companies and business houses have taken a round-about path to cash in on the young people's gullibility. They are marketing a number of what is called energy drink [4].

Islam T. (2012) also noted that many parents still buy these drinks for their children as they have no idea about its harmful effects. Many children buy and drink these drinks like juice or soft drinks. These children, along with their parents, need to be informed about these drinks [3].

Neil R. (2013) also identified that alluring ads on some of these drinks draw attention of the uninitiated and soon they become addicted not only to these but also to stronger drinks. Some food and drink experts fear that these drinks directly

contribute to rising crimes in society. Their apprehension cannot be ruled out [4].

Star health (2011) reported that Energy drinks have Caffeine and its intoxication generally causes nervousness, anxiety, restlessness, insomnia, gastrointestinal upset and tremor. Moreover, many ingredients present in these drinks are not scientifically researched. Other than caffeine, ingredients of energy drinks include high level of sugar, taurine, glucuronolactone, vitamins B, E, inositol, guarana etc [2].

Islam T. (2012) mentioned that 400mg caffeine is enough for an adult male person and 300mg caffeine is enough for female in a day. But a can of energy drinks contains 360mg caffeine. So we should understand what could be the effect on our health when we regularly drink several cans of energy drinks. Unfortunately one of the bad effects of caffeine is it increases the tendency of urine and reduces the amount of water in body. Also, by consuming high amounts of caffeine regularly, there is a possibility of being affected by many diseases like nervousness, anxiety, headache, insomnia, blood pressure, asthma etc. Energy drinks also affect the kidneys and heart. It reduces the amount of oxygen in human body. Phosphoric acid which is used in energy drinks, demolishes the calcium of bones and teeth. It increases weight because of high calorie content. Moreover, there is another harmful effect called sterility. Male or female, who are used to energy drinks, have decreased fertility. In their cases, the rate of abortion is increased. Some energy drinks have 4 per cent alcohol, making it unlawful for the practicing members of many faiths [3].

Energy drinks Considered

Globe soft drinks Ltd: The market leader

This is the pioneer company is producing energy drinks in our country. They have captured a huge market share around 70% & obtain handsome profit. The sale of Tiger is also increasing. Energy drinks brand from Globe soft drinks Ltd. is "Royal Tiger".

Akij Food and Beverage Ltd. (AFBL): The market challenger

The second largest market owner of energy drink is AFBL. They have captured almost 25% market & their sales volume is also increasing. Brand from AFBL is "Speed".

PRAN Foods Ltd.

The market follower PRAN came in the energy drink market as the follower. PRAN commercially launched its product in 2008. Its market share is approximately 1%. Brand from PRAN Foods Ltd is "Pran Power".

Osotspa Co. Ltd.

This company is working in Thailand and its product is imported here by Eurydice

and Eleftheria Ltd. Its brand name is “Shark”. It performs niche marketing and gained 4% market share.

Brand names & their meanings:

Brand name	Meanings
Royal Tiger	The brand name is synonymous to Royal Bengal Tiger, which is the symbol of power and strength.
Speed	Speed means motion/force. It brings motion in our life. Makes our life dynamic.
Shark	Shark is a fast moving & energetic animals in the sea. This drink enables us move fast & be stronger like shark.
PRAN Power	This drink generates power for us to work more powerfully & smartly.

Source: www.assignmentpoint.com, retrieved at 27/04/1014

Market Share of each producer’s brand:

Producer & Brand Name	Market Share (%)
Globe Soft Drinks Ltd. Royal Tiger	70
Akij Food & Beverage Ltd. Speed	25
PRAN Foods Ltd. Pran Power	01
Osotspa Co. Ltd. Shark	04

Source: www.assignmentpoint.com, retrieved at 27/04/1014

Respondents' gender

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid Male	264	84.3	84.3	84.3
Female	49	15.7	15.7	100.0
Total	313	100.0	100.0	

Respondents' age

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid Lowest through 19	30	9.6	9.6	9.6
20 through 24	272	86.9	86.9	96.5
25 through 29	8	2.6	2.6	99.0
30 through Highest	3	1.0	1.0	100.0
Total	313	100.0	100.0	

3. Objective and Methodology

Objective

To find out what factor or factors influence consumers to adopt energy drink.

- To see the role of marketers in influencing consumers to adopt energy drink.
- To see health and condition drink,
- To provide suggestions for better policy making regarding energy drink.

Methodology

Research design

Research type	Descriptive
Types of data	Primary
Sampling design process	Questionnaire with two parts: Part A, consists of demographic information of students such as age, gender and semester. Part B (Energy drink adoption criteria), consists of sixteen variables, and were designed in a Likert scale format which is given five point rating scale ranges from not important at all to very important.
Target population	The students of Sylhet International University, a Private University in Sylhet Division, Bangladesh.
Sampling technique	Stratified Sampling, We have considered each semester as one stratum and also chosen 10 strata; ten semester students have been chosen for sampling purpose. The selection of stratum has been based on the secondary data. We have then selected samples from each stratum by using simple random sampling procedure. We picked 31 samples from each stratum.
Sample Size	313
Sampling frame	Students' semester number is the identification number of sampling unit and it is used as sampling frame.

Method of administering questionnaire	Personal interview of the respondents; average interviewing time was 10-15 minutes
Execution	The survey was conducted over a period of 20 days in the month of November 2013.
Data analysis and interpretation	Statistical Packages for Social Sciences (SPSS)

4. Analysis and Findings

By conducting factor analysis, we have tried to identify the factors behind preferring energy drink, the first step in this analysis has been to measure the appropriateness of factor analysis and the following results here have been produced to make the decision.

Hypothesis testing

$H_0: R^2_{pop} = 0$ the variables are uncorrelated in the population

$H_1: R^2_{pop} \neq 0$ the variables are correlated in the population

Table 1: KMO and Bartlett's Test

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.685
Bartlett's Test of Sphericity	Approx. Chi-Square	789.445
	df	120
	Sig.	.000

Hypothesis can be tested through Bartlett's Test of Sphericity. So the above significant value of Bartlett's Test of Sphericity rejects the null hypothesis. A high value of chi square leads a .000 significant value which ultimately rejects null hypothesis. As a result it can be said that factor analysis is an appropriate technique where all the variables are correlated in the population. Kaiser-Meyer-Olkin Measure of Sampling Adequacy is another important method to determine the appropriateness of factor analysis. A value greater than 0.5 indicates that correlation between pairs of variables can be explained. Here the result is .685 which is positive and is a sign of the appropriateness of factor analysis.

Descriptive statistics

Variables	N	Mean	Std. Deviation
Product's quality	313	4.1342	.93775
Refreshment	313	4.0799	.99519
Brand image of the product	313	3.9712	1.16126
Product's price	313	3.8275	1.22040

Product's popularity	313	3.7636	1.14984
Reduction of thirsty	313	3.6869	1.24205
Stamina	313	3.6422	1.20884
Product's quantity	313	3.5399	1.14599
Availability of the product	313	3.4984	1.08641
TV and radio commercials of the product	313	3.4089	1.37707
Experience with the product	313	3.3834	1.32529
Calories	313	3.3674	1.21522
Ingredients of the product	313	3.3387	1.27111
Size and shape of the bottle	313	3.2460	1.33500
Prestige attached with the product	313	2.9489	1.32431
Model/s used in the commercials	313	2.8051	1.43571

Source: Field survey, 2013

From the table 2, looking at the mean, we can conclude that product's quality is the most important variable that influence customers to take energy drink. It has the highest mean of 4.134.

Table 3: Communalities		
	Initial	Extraction
Calories	1.000	.590
Stamina	1.000	.662
Refreshment	1.000	.368
Reduction of thirsty	1.000	.193
Ingredients of the product	1.000	.235
Product's quality	1.000	.350
Product's quantity	1.000	.358
Product's price	1.000	.326
Availability of the product	1.000	.419
Brand image of the product	1.000	.302
TV and radio commercials of the product	1.000	.460
Model/s used in the commercials	1.000	.615
Prestige attached with the product	1.000	.371
Product's popularity	1.000	.392
Experience with the product	1.000	.349
Size and shape of the bottle	1.000	.328
Extraction Method: Principal Component Analysis.		

The initial value for each variable under communality table is 1 as the unities were inserted in the diagonal of the correlation matrix. The next column gives the data of the extracted values of each variable. The extracted values are less than the initial value because all the 16 factors will not be retained and this will be explained later in the analysis. Table 3 shows how much of the variance in the variables has been accounted for by the extracted factors. For instance over 66 percent of the variance in Stamina is accounted for while almost 62 percent of the variance in model/s used in the commercials is accounted for.

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
	1	2.972	18.575	18.575	2.972	18.575	18.575	2.525	15.783
2	1.968	12.300	30.875	1.968	12.300	30.875	2.073	12.953	28.736
3	1.378	8.613	39.487	1.378	8.613	39.487	1.720	10.751	39.487
4	1.287	8.047	47.534						
5	1.102	6.891	54.425						
6	1.010	6.311	60.736						
7	.953	5.955	66.691						
8	.839	5.246	71.937						
9	.718	4.489	76.426						
10	.677	4.229	80.654						
11	.653	4.081	84.735						
12	.614	3.839	88.574						
13	.550	3.436	92.010						
14	.476	2.977	94.987						
15	.419	2.617	97.605						
16	.383	2.395	100.000						

Extraction Method: Principal Component Analysis.

Source: Field survey, 2013

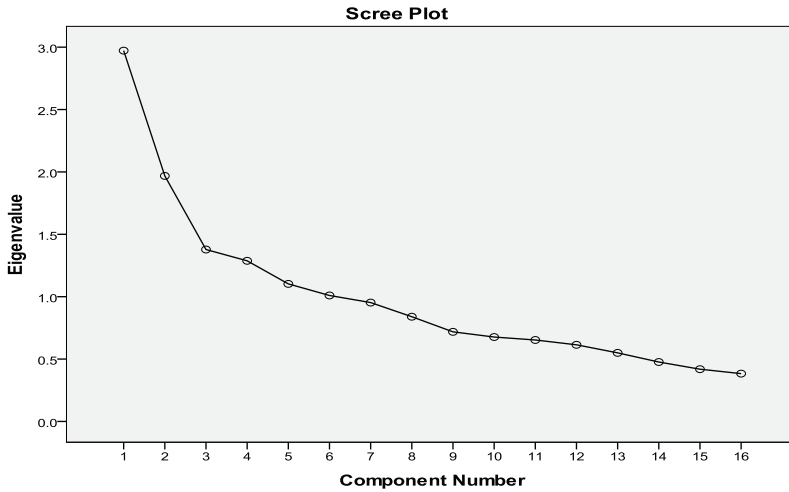
From the output of table 4 shows extraction sums of squared loadings show those variables that are retained. Here 3 components are retained which have total 39.49% of the total variance. We noticed that the first factor accounts for 18.575 percent of the variance, the second 12.30 percent and the third 8.613 percent.

Determination of the number of the factors

Here in this study, we are extracting 3 factors and our decision is based on the following grounds:

- ✓ We are extracting those factors whose eigenvalue is more than 1 and 6 factors have that score but we take top 3 factors.

- ✓ The cumulative variance of 3 factors is 39.49% which is satisfactory and that's why we are extracting six factors.
- ✓ Scree plot gives an about the number of factors to be extracted. The following scree plot also shows the number of factors to be extracted.



Rotated Component (Factor) Matrix

Looking at the table 5 below, we can see the factor loadings for each variable. We went across each row, and highlighted the factor that each variable loaded most strongly on (by suppress small coefficient below 0.60).

	Component		
	1	2	3
Model/s used in the commercials	.770		
TV and radio commercials of the product	.673		
Product's popularity			
Product's quantity			
Prestige attached with the product			
Product's price			
Reduction of thirsty			
Availability of the product		.631	
Product's quality			
Experience with the product			
Size and shape of the bottle			
Brand image of the product			
Ingredients of the product			
Stamina			.795
Calories			.722
Refreshment			
Extraction Method: Principal Component Analysis.			
Rotation Method: Varimax with Kaiser Normalization.			

Based on these factors loadings, we think the factors represent:

- ✓ Variables such as Model/s used in the commercials and TV and radio commercials of the product loaded very strongly on factor 1 as such promotional factor.
- ✓ One variable such as availability of the product loaded strongly on factor 2 like as distribution factor.
- ✓ Stamina and Calories are loaded strongly on factor 3 as such health factor.

Table 6: Factor labeling			
Factor	Factor importance (% variance explained)	Loading	Variables included in the factor
F1	Promotional factor (18.575%)	.770	Model/s used in the commercials
		.673	TV and radio commercials of the product
F2	Distribution factor (12.30%)	.631	Availability of the product
F3	Health factor (8.613%)	.795	Stamina
		.722	Calories

5. Concluding Remarks

Although energy drinks has been taken for releasing thirsty and get refreshment; marketers need to concentrate on reducing high level of caffeine from energy drink as well as include risk free nutritional ingredients for health. Also Marketers need to increase promotional activities to gain market share; they have to careful about the language used in these advertisements so that there is no objectionable elements to attract people. Marketers need to step back highlighting white lie and keeping the health hazardous ingredients of energy drink hidden. They have to provide the exact picture of the quality and ingredients of the products.

Consumers have to be aware about the addiction of energy dink as the negative impacts of energy drinks are greater than the positive impacts. Energy drinks can leads to nervousness, anxiety, headache, insomnia, blood pressure, asthma. It demolishes the calcium of bones and teeth, increases weight and reduces the amount of oxygen in human body. It also decreases fertility for both male and female. Consumer Association of Bangladesh(CAB) can put pressure on government institution such as Bangladesh Standards and Testing Institute (BSTI) to make solid policy for quality assurance of energy drink. Besides Consumers, Society as a whole has to take initiatives to raise the awareness program about positive and negative impacts of having energy drinks.

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