



GLOBAL JOURNAL OF MANAGEMENT AND BUSINESS RESEARCH: G  
INTERDISCIPLINARY

Volume 20 Issue 2 Version 1.0 Year 2020

Type: Double Blind Peer Reviewed International Research Journal

Publisher: Global Journals

Online ISSN: 2249-4588 & Print ISSN: 0975-5853

## Status of Food Labeling of Soft Beverage According to BFSA Guidelines & Laws: Matter of Increasing Customer Awareness

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**Keywords:** food labeling, customer awareness, soft beverage, BFSA, healthy & safe food.

**GJMBR-G Classification:** JEL Code: M31



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# Status of Food Labeling of Soft Beverage According to BFSA Guidelines & Laws: Matter of Increasing Customer Awareness

Md. Touhidul Islam<sup>α</sup>, Tasnima Haque<sup>ο</sup> & Mohammad Mahmudur Rahman<sup>ρ</sup>

**Abstract-** Why should people know about the Labeling of Soft Beverages in Bangladesh? To find the answer to this question, this article has focused on the Food Safety Act, 2013 of Bangladesh, the status of Labeling of Soft Beverage, and customer awareness. The core intent of the study is to examine and analysis the present scenarios of soft beverage labeling according to the "Regulations of product labeling," the Food Safety Act, 2013 (Act No. 43 of 2013) and "Regulations on the use of additives products," (Act No. 43 of 2013), section-87 and section-27. To attain the goal of the research, most important considerable variables and attributes are taken for survey from BFS Act and regulations. The study, descriptive in nature, has been conducted based on primary data. Total 39 criteria (Variable) have been taken related to the Regulations of product labeling and Regulations on the use of additives products. The sample size of the study is 29, where the sample is the labels of soft beverage. The convenience sampling method has been used here where the sample collected from Dhaka, Manikganj, Gazipur district of Bangladesh. The collected data are analyzed by various statistical tools and techniques, including frequency distribution, descriptive statistics, and correlation through the data processing software SPSS (Statistical Package for the Social Science) 25.0 version. The outcomes of the study express that within 39 criteria, Fanta, Speed & Soul up maintain 62.5%, 7up- 66.7%, Sprite- 75.0%, Royal Tiger, Frutica, Oscar & Mejanda- 66.7%, Tropicana frutz, Dinko & Current- 79.2%, Fruto & Sprite- 83.3%, Pepsi- 66.7%, Cocacola- 58.3%, Speed- 62.5%, Diet\_Coke- 58.4%, Clemon, Cocacola, Clear Up, Mountain dew, Apple\_Fizz& Mojo- 70.8%, Power, Brever, & Fizz Up- 75.0%, Jerra\_masal- 50.0% and Click- 37.5% of the total regulations (selected criteria). Outcomes of the study may be help to the consumer of soft beverages to choose healthy soft beverage. On the other hand, the study outcomes will be beneficial to increase the awareness of customers towards the information of food labeling and possible to minimize the health risk. It can contribute to increasing the social and moral responsibility of marketers and, it could also indirectly contribute to achieving SDGs of Bangladesh expected by 2030. This study has evaluated the present Status of Food Labeling of Soft Beverage, and future recommendations are proposed.

**Keywords:** food labeling, customer awareness, soft beverage, BFSA, healthy & safe food.

## I. INTRODUCTION

According to the statistics of WHO, around 600 million people (almost 1 in 10 people) in the world are falling ill after contaminated food. It also estimated that unsafe food resulting in the loss of 33 million healthy life and 420 000 die every year (WHO, 4 June 2019). So it is time to make people aware of safe and healthy food eating especially soft beverages. It also matters whether the soft drink companies are properly using the labeling of their product or not according to the BFSA act. So the core intent of the study is to examine and analysis the present scenarios of soft beverage labeling according to the "Regulations of product labeling," the Food Safety Act, 2013 (Act No. 43 of 2013) and "Regulations on the use of additives products," (Act No. 43 of 2013), section-87 and section-27. The salient objective of this study is to represent the overall scenarios/ status of labeling of soft beverages according to the Food Safety Act- 2013, rules and policies of Bangladesh. In chapter two, the general conditions of food labeling have been written in this Gazette. There has a clear direction about product labeling. We have taken the 29 general directions (criteria) for our research and finally we select 24 criteria for this study named International Brand, Pet Bottle, Manufacturer name, Manufacturer address, Brand name in Bengali, Batch No., Net weight/amount, Price in Bengali, Manufacturing Date, Expire Date, BSTI Logo, Ingredients name in Bengali, Nutritional Value Table, Specific Preservatives name, Specific Acedulants/AR name, Specific Stabilizers name, Specific Clouding Agents name, Specific Color name, Specific Flavors name, Allergen on Label, GM Food on Label, Consumer Help Line number on Label, Barcode Use, Vegetarian Symbol. It is time to increase customer awareness about the information of food labeling. Through this study, reader can get an idea about the status of food labeling of soft beverages. If customers are aware of the information and status of food labeling, then they will choose the right, healthy and safe food for them, and in this way, it's possible to reduce the rate of mortality and

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illness. The findings of this study will provide an in-depth understanding of the status of food labeling that means whether they (soft beverage producing company) following and using the directions of BFSA's "Regulations of product labeling" or not. By analyzing this study, the concerned authority can take legal action towards the company, and the consumers may be aware of those company's food. This research study considers only 39 criteria (variables) and choose the 24 variables to conduct this study, and sample size is only 29, so here the future research scope to study more.

## II. OBJECTIVES OF THE STUDY

The salient objective of this study is to represent the overall scenarios/ status of labeling of soft beverages according to the Food Safety Act- 2013, rules and policies of Bangladesh.

The other purposes are:-

- Help to increase the customers' awareness towards the information of soft drink labeling through comparative study.
- To find out the Comparative position of various branded soft beverage labeling.
- To provide information that will help the customers to choose a healthy soft drink.
- To make some recommendations to the National and International soft beverage industry/ company according to the findings of this study.

## III. RESEARCH METHODOLOGY

The study, descriptive in nature, has been conducted based on a survey of primary data.

The sample size of the study is 29, where the sample is the labels of soft beverage. Data has been collected and analyzed based on the Total 39 criteria (Variables).

Quantitative primary data have been collected by using a self-administered structured "Dichotomous Questions" method.

Nonprobability Convenience sampling method has been used for collecting primary data here where the sample collected from Dhaka, Manikganj, Gazipur district of Bangladesh in the month of December 2019.

The collected data are analyzed by various statistical tools and techniques, including frequency distribution, descriptive statistics, and correlation through the data processing software SPSS (Statistical Package for the Social Science) 25.0 version.

## IV. DATA ANALYSIS & FINDINGS

Here, the Table-1.1 showing the variable names and percentages of criteria usages on the product label (soft beverage). Here 29 samples (soft beverages) are using "Manufacturer Name" and "Manufacturer address" 100% on their product labeling but in conversely "Specific Clouding Agents name," "Allergen on Label," and "GM Food on Label" are not used in their labeling 100%.

Table 1.1: Frequency distribution (percentage) of 24 Criteria of 29 Soft beverages products

Variables Names	NO (%)	YES (%)
International Brand	58.6	41.4
Pet Bottle	13.80	86.2
Manufacturer name	0	100
Manufacturer address	0	100
Brand name in Bengali	6.9	93.1
Batch No	3.4	96.6
Net weight/amount	3.4	96.6
Price in Bengali	27.6	72.4
Manufacturing Date	3.4	96.6
Expire Date	3.4	96.6
BSTI Logo	6.9	93.1
Ingredients name in Bengali	3.4	96.6
Nutritional Value Table	13.8	86.2
Specific Preservatives name	34.5	65.5
Specific Acedulants/AR name	17.2	82.8
Specific Stabilizers name	82.8	17.2
Specific Clouding Agents name	100	0
Specific Color name	48.3	51.7
Specific Flavors name	72.4	27.6

Allergen on Label	100	0
GM Food on Label	100	0
Consumer Help Line number on Label	34.5	65.5
Barcode	3.4	96.6
Vegetarian Symbol	41.4	58.6

Following Table -1.2 are showing the descriptive statistics with mean, Std. Deviation and variance that represent the comparative usage of criteria in 29 products (Soft beverages/ Samples).

Table1.2: Descriptive analysis of 24 criteria for 29 samples. (N=24)

Descriptive Statistics			
Variables Name ( Yes=1, No= 0)	Mean	Std. Deviation	Variance
International Brand	.41	.501	.251
Pet Bottle	.86	.351	.123
Manufacturer name	1.00	.000	.000
Manufacturer address	1.00	.000	.000
Brand name in Bengali	.93	.258	.067
Batch No.	.97	.186	.034
Net weight/amount	.97	.186	.034
Price in Bengali	.72	.455	.207
Manufacturing Date	.97	.186	.034
Expire Date	.97	.186	.034
BSTI Logo	.93	.258	.067
Ingredients name in Bengali	.97	.186	.034
Nutritional Value Table	.86	.351	.123
Specific Preservatives name	.66	.484	.234
Specific Acedulants/AR name	.83	.384	.148
Specific Stabilizers name	.17	.384	.148
Specific Clouding Agents name	.00	.000	.000
Specific Color name	.52	.509	.259
Specific Flavors name	.28	.455	.207
Allergen on Label	.00	.000	.000
GM Food on Label	.00	.000	.000
Consumer Help Line number on Label	.66	.484	.234
Barcode Use	.97	.186	.034
Vegetarian Symbol	.59	.501	.251
Valid N (list wise)	24		



Comparative position of using "Regulations of product labeling," the Food Safety Act, 2013":

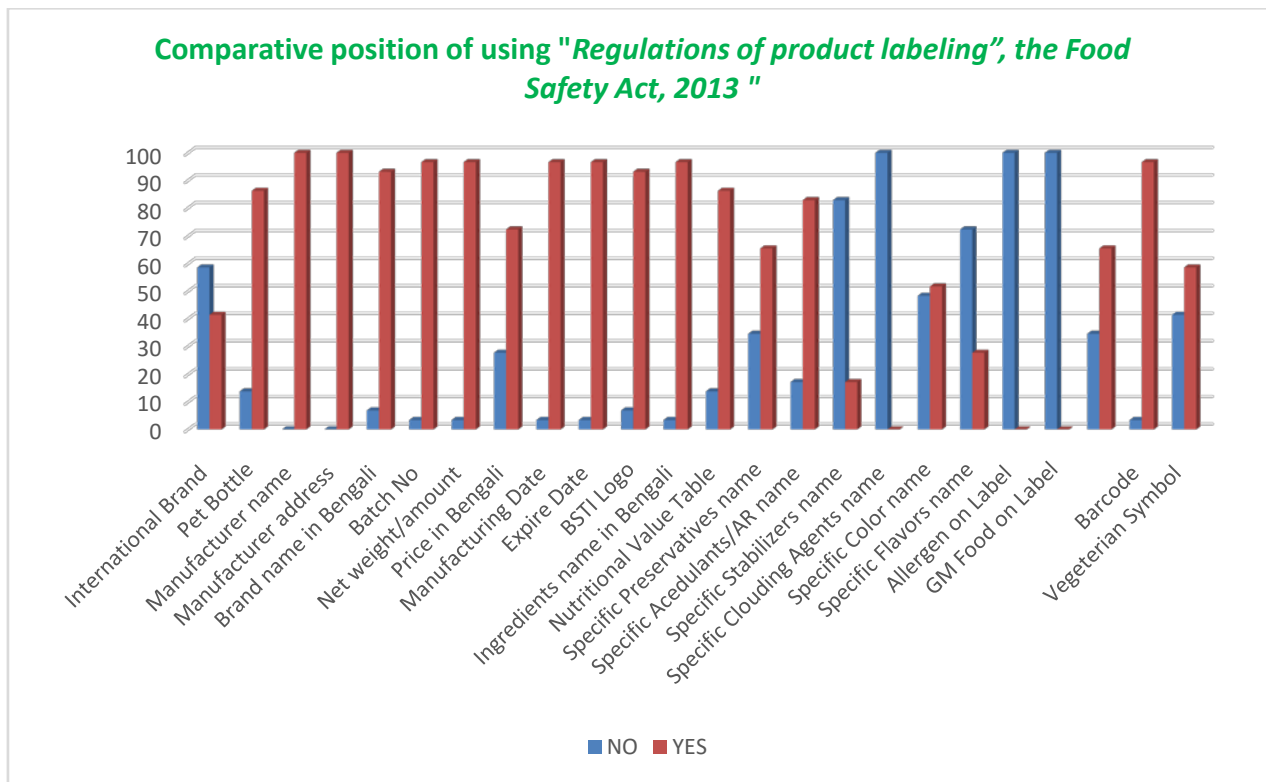


Fig 1.1: Comparative status analysis of the Criteria usages within the "Regulations of product labeling."

Figure -1.1 express the outcomes of the study that National brand is 58.6% and international brand is 41.4%, Pet Bottle is 86.2%, and cane is 13.8%, brand name in Bengali is written in 93.1% label where 6.9% of total label does not contain the Bengali brand name, both percentage of use of batch no. and net weight amount is 96.6%, where 3.4% do not use the batch no. In 72.4% sample show that it write Price in Bengali in the food label and remain 27.6% do not, 96.6% use the manufacturing date, expire date, Ingredients name in Bengali and barcode in their label and remain 3.4% are not, 93.1% have used the BSTI logo and 6.9% do not use, Nutritional Value Table has been used in 86.2%, and 13.8% do not, Specific Preservatives name has

been used in 65.5% and remaining (34.5%) do not, Specific Acedulants AR name is 82.8% not in use 17.2%, Specific Stabilizers name used by 17.2% and not in use is 82.8%, both Specific Clouding Agents name, GM Food on Label and Allergen on Label are not mentioned by 100%, Specific Color name has been mentioned by 51.7%, and remain (48.3%) do not specific Flavors name used by 27.6% and do not by 72.4%. Consumer Help Line number on Label is 65.5%, and 34.5% do not use, use Vegetarian Symbol by 58.6% and remain 41.4% do not. Results also indicated that the observed sample do not fulfill the regulations of Safety Act, 2013 properly (100%).

Table 1.3: Frequency distribution (percentage) of 29 Soft beverages within 24 Criteria

Product Name	NO (%)	Yes (%)
Fanta	37.5	62.5
Cocacola	29.2	70.8
7up	33.3	66.7
Sprite	25	75
Current	20.8	79.2
Speed	37.5	62.5
Royal Ti	33.3	66.7
Mejanda	33.3	66.7
Tropicana	20.8	79.2

Oscar	33.3	66.7
Fruto	16.7	83.3
Dinko	20.8	79.2
Soul up	37.5	62.5
Mountain	29.2	70.8
Frutica	33.3	66.7
Apple Fi	29.2	70.8
Pepsi	33.3	66.7
Brever	25	75
mojo	29.2	70.8
Cocacola_C	41.7	58.3
speed	37.5	62.5
Diet Cok	41.7	58.3
Sprite-C	41.7	58.3
clemon	29.2	70.8
Power	25	75
Fizz Up	25	75
Clear Up	29.2	70.8
Jerra ma	50	50
Click	62.5	37.5

Table-1.3 express that within 39 criteria, Fanta, Speed & Soul up maintain 62.5%, 7up- 66.7%, Sprite- 75.0%, Royal Tiger, Frutica, Oscar & Mejana- 66.7%, Tropicana frutz, Dinko& Current- 79.2%, Fruto & Sprite- 83.3%, Pepsi- 66.7%, Cocacola- 58.3%, Speed- 62.5%, Diet\_Coke- 58.4%, Clemon , Cocacola, Clear Up, Mountain dew, Apple\_Fizz & Mojo- 70.8%, Power, Brever, & Fizz Up- 75.0%, Jerra\_masal- 50.0% and Click- 37.5% of the total regulations (selected criteria).

product labeling where we see the position of CLICK is in the highest for not using the product labeling regulations 62.5% and conversely FRUTO is the lowest position for not using the product labeling regulations that is 16.7%. Here not one product does use the 100% BFSA's "Regulations of product labeling" guidelines. So it is an alarming issue to be considered by the concerned authority, company, and consumers also.

Analysis through Pie diagram: Fig-1.2 showing the competitive status of using the regulations of

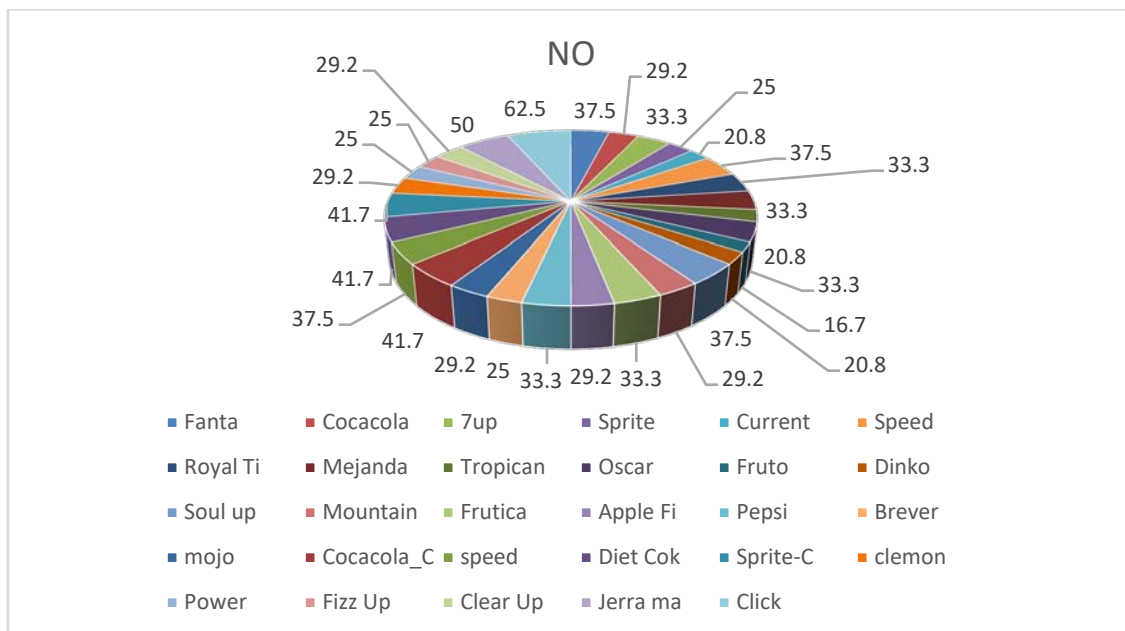


Fig 1.2: Pie diagram of comparative analysis of NOT using the "Regulations of product labeling".

Figure -1.3 represents the percentage of samples, where FRUTO (83.3%) is in the highest usages the food labeling guidelines by the selected position, and CLICK (37.5%) is in the lowest position.

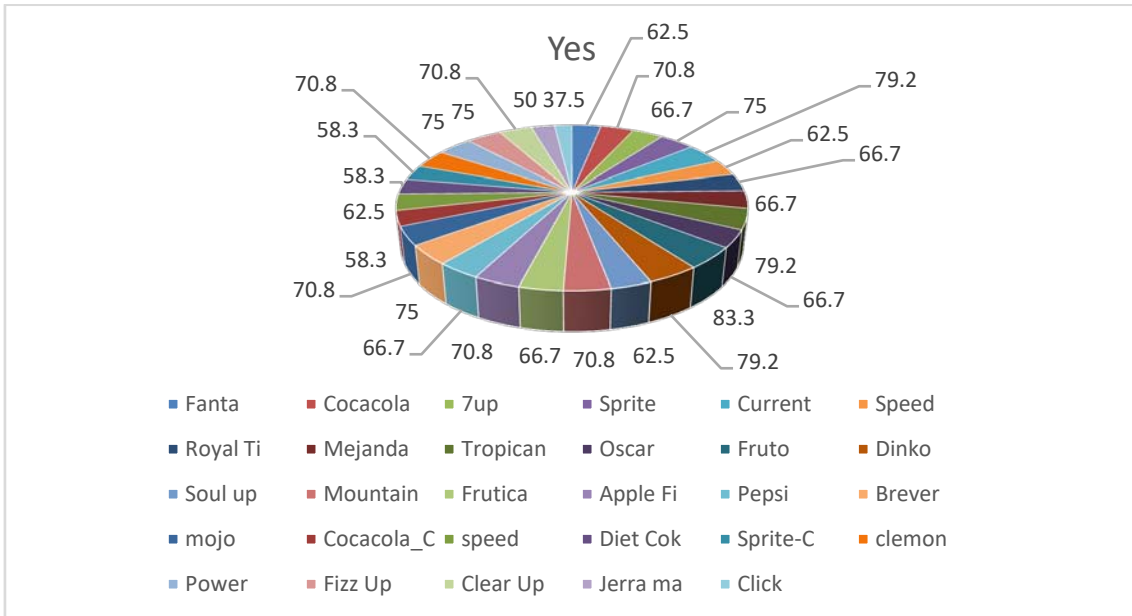


Fig 1.3: Pie diagram of comparative analysis of using the "Regulations of product labeling."



Correlation among the Twenty four Samples (Soft beverages):

Table 1.4: shows the comparative Correlations among the 29 samples.

Correlations																													
Sample Names	Fanta	Cocacola	7up	Sprite	Current	Speed	Royal_Tiger	Mejanda	Tropicana_fruiz	Oscar	Fruto	Dinko	Soul_up	Mountain_dew	Frutica	Apple_Fizz	Pepsi	Brever	mojo	Cocacola_C	Speed_C	Diet_Coke	Sprite_C	clemon	Power	Fizz_Up	Clear_Up	Jerra_masal	Click
Fanta	1	.828	.730	.745	.662	.467	.365	.548	.500	.183	.346	.238	.467	.639	.548	.450	.730	.348	.639	.917	.467	.362	.917	.450	.547	.547	.450	.258	.600
Cocacola		1	.713	.900	.799	.450	.519	.713	.647	.324	.451	.348	.639	.597	.519	.597	.713	.476	.798	.759	.450	.300	.759	.597	.688	.688	.597	.275	.497
7 up			1	.816	.725	.730	.625	.625	.722	.250	.395	.290	.548	.907	.437	.519	.812	.408	.519	.657	.730	.289	.657	.713	.408	.612	.519	.530	.548
Sprite				1	.889	.547	.612	.816	.647	.408	.516	.415	.745	.688	.408	.688	.612	.556	.688	.683	.547	.270	.683	.688	.556	.778	.688	.385	.447
Current					1	.662	.725	.725	.744	.290	.596	.495	.662	.799	.508	.799	.725	.652	.799	.607	.662	.240	.607	.574	.652	.652	.574	.513	.397
Speed						1	.913	.730	.657	.365	.577	.662	.644	.828	.730	.639	.730	.547	.639	.393	.822	-.161	.393	.639	.547	.547	.450	.602	.422
Royal Tiger							1	.813	.722	.437	.632	.725	.730	.713	.625	.713	.625	.612	.713	.299	.730	-.206	.299	.713	.612	.612	.519	.530	.365
Mejanda								1	.500	.625	.632	.725	.913	.519	.625	.713	.438	.612	.713	.478	.548	-.165	.478	.713	.612	.816	.713	.354	.365
Tropicana F									1	.279	.592	.489	.441	.797	.568	.568	.797	.407	.647	.441	.657	.204	.441	.568	.489	.407	.339	.505	.423
Oscar										1	.632	.725	.730	.130	.437	.324	.063	.612	.324	.120	.183	-.248	.120	.519	.408	.612	.519	.177	.000
Dinko											1	.662	.348	.725	.574	.290	.652	.574	.191	.450	-.335	.191	.574	.652	.652	.574	.308	.185	
Soul_up												1	.450	.548	.639	.365	.745	.639	.393	.467	-.161	.393	.639	.547	.745	.639	.430	.244	
Mountain_D													1	.519	.597	.907	.476	.597	.573	.828	.257	.573	.597	.476	.476	.395	.642	.497	
Frutica														1	.519	.625	.408	.713	.478	.548	-.165	.478	.324	.612	.408	.324	.354	.365	
Apple_Fizz															1	.519	.688	.798	.387	.639	.214	.387	.597	.688	.688	.597	.642	.118	
Pepsi																	1	.408	.713	.657	.730	.289	.657	.519	.612	.408	.324	.530	.548
Brever																		1	.688	.293	.547	.180	.293	.688	.778	.778	.688	.050	
mojo																			1	.573	.639	.257	.573	.597	.900	.688	.597	.458	.308
Cocacola_C																				1	.567	.395	1.00	.387	.488	.488	.387	.169	.480
speed_C																					1	.281	.567	.639	.547	.547	.450	.602	.244
Diet_Coke																						1	.395	.214	.225	.225	.214	.234	-.040
Sprite_C																							1	.387	.488	.488	.387	.169	.480
clemon																								1	.688	.900	.798	.458	.308
Power																									1	.778	.688	.385	.248
Fizz_Up																										1	.900	.385	.248
Clear_Up																											1	.275	.118
Jerra_masla																												1	.086
Click																													1

Pearson Correlation, \*\*Correlation is significant at the 0.01 level (two-tailed), \*Correlation is significant at the 0.05 level (two-tailed)



## V. DISCUSSIONS

The supreme aim of this paper is to know the present scenarios of soft beverage labeling according to the "Regulations of product labeling," the Food Safety Act, 2013 (Act No. 43 of 2013) of Bangladesh Food Safety Authority (BFSA).

As the findings show that the within 29 variables (ingredients) "Specific Clouding Agents name," "Allergen on Label," "GM Food on Label" are not indicated/ specified in the label of soft beverage on the other hand "Specific Stabilizers name" is used by 17.2%, "Specific Flavors name" is used by 27.6%, "Vegetarian Symbol" is used by 58.6% within the 39 criteria.

Within the 29 samples ( products), "CLICK soft beverage" is the lowest BFSA labeling regulation follower (only 37.5%) contrary, "FRUTICA" follows the highest -83.3%, CURRENT and DINKO simultaneously follow 79.2% of total regulations.

## VI. RECOMMENDATIONS

1. BFSA should use the legal steps towards the company who are not following the "Regulations of product labeling" properly.
2. The Consumer should be aware of the Sample (soft beverage) to drink.
3. Companies should give more emphasis on their food labeling.
4. Company must write/usage the full information on the product label according to the BFSA guidelines.
5. As none of the product does use the Specific Clouding Agents name, Allergen on Label, GM Food on Label in their beverage label so all the companies of these products should use this types of information.
6. Concerned authority of food safety and government should monitor the market to know whether the companies are using BFSA's guideline of product labeling or not as this study has shown that no one's product (soft beverage) labeling had followed the 100% of food labeling guidelines.
7. Food safety authority should take programs (advertising, promotion) to make consumers' aware of the information on food labeling.
8. Consumers should be aware and concern about the information of food labeling that will help people to choose safe food and leads to lead a healthy life.

## CONCLUSION

To achieve SDGs of Bangladesh expected by 2030, it's high time to give more concern to food safety and make people more aware of choosing and eating food. As it is mandatory to follow the directions of BFSA to the labeling of food, but the study shows that soft beverage producing company do not fully follow that.

The result of this study helps to the rules creating and imposing authority, government, and soft beverages company to take the immediately necessary steps to confirm the food labeling regulations. Mostly this study will help the general people to understand and to be conscious about the food labeling that will lead them to live with a healthy and happy life. Outcomes of the study may helpful to the consumer of soft beverages to choose the healthy soft beverage. On the other hand, the study outcomes are expected to be beneficial to increase the awareness of customers towards the information of food labeling and possible to minimize the health risk. The results of the study may generate new thoughts for the researchers and find improvement areas for soft beverage seller to serve better and achieve progress in the long term and it can contribute to increasing the social and moral responsibility of marketers and it could also indirectly contribute to achieve SDGs of Bangladesh expected by 2030. This study has evaluated the present Status of Food Labeling of Soft Beverage and future recommendations are proposed.

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