An Analysis on the Consumer Insights in the Bottled Water Market in Bangladesh

Md. Anwar Sadat Shimul
School of Business, North South University, Dhaka, Bangladesh

Ummee Kulsum
Premier University, Chittagong, Bangladesh

Mohammed Abu Jahed
Department of Management Studies, University of Chittagong, India

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Md. Anwar Sadat Shimul*
Ummee Kulsum**
Mohammed Abu Jahed***

ABSTRACT

The scarcity of publicly available purified water has increased the demand for bottled water in Bangladesh. Consumers prefer bottled water over tap water mostly for the safety, hygiene and convenience factors. As the bottled water market is becoming competitive day by day, companies are trying to create differentiations and innovations which have been found quite difficult but not impossible to implement in reality. Therefore, it is essential to understand the factors influencing consumers' preferences and decision making processes for bottled water purchase. This paper examines the consumers' tastes, preferences, perceptions for and attitudes toward bottled water in Bangladesh. The results of the research reveal that consumer behavior is both homogeneous and heterogeneous for bottled water while evaluating the water itself and comparing with other alternative drinks. However, still there are opportunities for innovation and differentiation to create a unique value proposition. The findings of the study will have important implications both in the field of academic research and practicing marketing world.

Keywords: Consumer behavior, bottled water, consumer preferences and attitudes

INTRODUCTION

The study of consumer behavior mostly focuses on identifying the need and demand of the consumers and then satisfying the need with an intention to build a long term profitable customer relationship (Kotler & Armstrong, 2009). In today's hyper-competitive marketing environment, companies are consistently emphasizing on innovation and product differentiation to win the consumers' mind share (Crane et al, 2009). However, if the need is universal and the product is vital for consumers' survival, companies need to be very careful in designing their marketing strategy. The bottled water is such an item that consumers purchase to fulfill the basic need - quenching thirst, and they do not hold strong intention to change the brand because a trial-and-error approach with drinking water may lead to the risk of life sometimes. As a result, the bottled water marketers need to offer a high standard product that will gain brand insistency from the consumers. However, this task is not easy because the consumers are shaped by heterogeneous personal, interpersonal and social factors. Therefore, it is imperative to study the consumer insights in the bottled water market to understand the market dynamics.

* Lecturer, School of Business, North South University, Dhaka, Bangladesh.
E-mail: shimul@northsouth.edu

** Lecturer, Faculty of Business Studies, Premier University, Chittagong, Bangladesh.
Email: ummee.kulsum@gmail.com

*** Associate Professor, Department of Management Studies, University of Chittagong, Bangladesh. jahedm@gmail.com, mohammed.jahed@curtin.edu.au

OBJECTIVES OF THE STUDY

Understanding the insights of consumer perception toward bottled water has become an issue of enormous importance due to increased worldwide demand (Drake 2010) and consumers' concern about the quality and image of bottled water. Earlier researches about bottled water put focus on the quality of tap water and bottled water, consumers' acceptance of bottled water, safety factors and hygiene issues etc. (Drake, 2010; Doria, 2006; Rodwan, 2009). Moreover, there have been very limited studies on the bottled water market in Bangladesh. Therefore, this study would be a unique contribution to the area of bottled water marketing and academic field while it would explore both the consumer and the market from a heterogeneous parameter perspective. The specific objectives of this study are as follows:

i. To understand the consumer behavior and perception toward the bottled water in comparison to tap water and other drinks;

ii. To identify and asses the factors that shapes the consumers' attitude toward the bottled water;

iii. To investigate the relationship among consumers' personal, interpersonal andsocial factors with the attitude toward bottled water;

iv. To test the strength of brand loyalty with its various inner and outer facets;

v. To reveal the untapped factors that the marketing strategists should seriously take into account for next generation consumers of the bottled water.

REVIEW OF LITERATURE

The quality of bottled water and consumers' perception in this regard has gained significant attention from the industry specialists and market researchers; because pure drinking water has become a burning issue around the world on some major social, economic and political grounds over the last two decades. Teillet, Cordelle and Schlich (2009) find that only 1% people around the world, mostly in the developed world, use tap water for drinking. As the tap water is unsafe and unhealthy in most of the countries, the majority of the world population is depending on purified water from different sources.

Finlayson (2005) explores the historical consequences of bottled water industry and states that in the year 1968, for the first time in the history, a French company named 'Vittel' offered plastic bottled water for general public consumption. Later on, the product got popularity in other parts of Europe. Over the years, bottled water is getting consumers' acceptance in other part of the world too. Drake (2010) cites that the world bottled water market has increased by 41% since 2007 and in the Asian market it would have a regular growth of 5% by the year 2012. Even in Sri Lanka, the country with annual per capita income worth $5600 (CIA 2012), the spending for bottled water increased by 182% from the year 2007 to 2009 (Silva, Udugama and Jayasinghe-Mudalige, 2012).

In the earlier years, there have been several studies focusing on identifying the factors that motivate consumers to purchase bottled water. By conducting a research on the consumers from the USA, Canada and France, Doria (2006) mentions that the two drivers; organoleptics (water characteristics that affect the sense of taste, odor and sight) and health and risk concerns (safety issue), concern the consumer buying behavior. He also argues that many times the consumers by themselves are not able to evaluate the quality of bottled water;

therefore the marketing activities such as advertisement, celebrity endorsement, brand visibility, packaging and other offerings by competing companies influence the consumers as well. In addition to that, Rodwan (2009) points out consumers in the USA and Canada buy bottled water as a better alternative to juice and carbonated drinks. By contrast, in the developing countries bottled water is mostly consumed as the alternative for unsafe tap water. There are some complicating factors, like location and intended use, which may interfere with present understanding about public preference of bottled water. Besides, customers have little brand loyalty (FWR 1996), and only very few customers can distinguish between types of bottled water (e.g. mineral vs. filtered) available in the market (Doria, 2006). This conclusion is similar to the assessment of Abraham *et al.* (2000) who by using the Hanemann framework identified bottled water to be perfect consumption substitute for tap water.

The key value proposition placed by the bottled water manufacturers highlights the bottled water as the safer, healthier and more reliable than other soft drinks. Earlier studies (Hunter 1993; Olson 1999) find that bottled water is not necessarily "better" or "worse" than tap water. The quality of bottled water varies from market to market depending on several quality factors and measurement parameters.

In some countries, tap water is found to be more purified than bottled water because of the high standard and quality control policies from the governments (Olson 1999). However, so many times consumers fail to evaluate the quality of water if they are not provided adequate information. A study by Falahee and MacRae (1995) suggests that British students preferred tap water over bottled water in general, but in a blind comparison test, the same group favored bottled water more than the tap water. On the other hand, as cited by *All about Water* (2004), the TV show tilted *Good Morning America* (May 2001) reveals that 75% of tested New York City residents actually preferred tap water over bottled water in a blind taste test. Moreover, consumers' taste and preferences are not only influenced by the demographic factors but also by the temporal orientation and role overload that leads to the intention to live a healthy lifestyle (Divine and Lepisto, 2005).

In a study conducted among urban minority children and adolescents, Huerta-Saenz *et al.* (2011) find no statistical significant differences in water drinking preferences across age groups from infancy to adulthood. Moreover, there were no significant differences in drinking water preferences between African American and non-African American study subjects. In an earlier research, Jakus *et al.* (2009) add some other important factors, such as; convenience, better taste and smell, less health risk are burgeoning the demand for bottled water. How much safety the bottled water companies are ensuring is also quite controversial. The bottled water industry certainly believes that public fear over the safety of tap water is the major force driving their industry, and they often contrast the 'purity' of their product with the 'danger' from public supplies (Magiera, 1994; Olson, 1999). Besides, Wilk (2006) mentions another interesting observation, "People are also responding to a barrage of medical advice about their inadequate water intake. Bottled water surely has exactly this prosaic and utilitarian place in our lives." Islam and Habib (2009) investigate the influence of health beliefs and motivating factors on the purchase of bottled water by university students in Dhaka. Nevertheless, there are scopes to study the consumer insights in this perspective in the context of Bangladesh.

RESEARCH METHODOLOGY

This study attempts to examine the consumers' tastes, preferences, perceptions for and attitudes toward bottled water in Bangladesh. Considering the nature of the study, a structured questionnaire was developed and the respondents were asked to answer 20 questions. The questions highlighted four major areas: 1) Respondent's profile 2) Current consumption pattern 3) Brand preferences and future expectations, and 4) Current Perception and attitude. For the first three areas multiple choice questions were used and to check the current satisfaction level the researchers used 5-point Likert scale (Strongly Disagree=1, Disagree=2, Neutral=3, Agree=4 and strongly agree=5). To find out the influencing factors in the purchase of bottled water, consumers were asked to rank the factors with high influence, medium influence, low influence and no influence. After collecting the data the questionnaires were coded, recorded and analyzed by using SPSS software. Both descriptive and inferential statistics were used in analyzing the data.

A total of 650 consumers from Dhaka and Chittagong have been surveyed in this study. Attempts have been made to maintain diversity among respondents in terms of demographic, geographic, economic and social factors, such as: gender, age, income, education, residential location etc. The overall sample distribution is presented in Table-1.

Table - 1: Sample Profile

Consumers' Demographic Variables		Frequency	Percent
Gender	Male	337	52%
	Female	313	48%
Age (Years)	16-25	274	42%
	26-34	133	21%
	35-44	117	18%
	45+	126	19%
Highest Education	Primary	15	2%
	SSC	23	4%
	HSC	127	20%
	Undergraduate	194	30%
	Graduate	152	23%
	Post-graduate & above	139	21%
Monthly Income (Taka)	Less than 10,000	263	40%
	10,000-19,999	89	14%
	20,000-29,999	66	10%
	30,000-49,999	91	14%
	50,000 or more	141	22%

Simple random sampling (Malhotra and Das, 2011) was conducted since the research team randomly picked the potential respondents from the strata. As a result the probability for the potential respondents to be selected was equal for all and sample bias will be eliminated too (Lind, Marchal & Wathen, 2012).

ANALYSIS OF THE FINDINGS

Consumption pattern

The study attempts to reveal the current consumption pattern of bottled water among consumers from demographic, economic and social perspectives. It has been found that in the upper side about 31% of the male respondents and 19% of the female respondents drink bottled water every day. On the lower side, about 10% of the male and 20% of the female respondents drink bottled water couple of times in a year. Therefore, it is evident that male consumers drink more bottled water than their female counterpart. This clearly depicts the social setting and gender mobility in the culture of Bangladesh. Because of the social infrastructure, male are more extrovert than female and thus male consumers are taking more food and drinks outside resulting in more consumption of bottled water.

The consumption of bottled water varies according to age also. The researchers find that consumers belong to the age group 16-45 years drink more bottled water than the consumers who are older than 45 years. Among the respondents who are older than 45 years, more than two-third of the respondents drink bottled water once a month or couple of times in a year. This finding reflects the lifestyle of the consumers at different ages. The consumers who are 16-25 years old are more on-the-move than the 45 years and older consumers. Therefore, as the age increases, the frequency of bottled water consumption decreases.

It has been found that there is a positive correlation between the level of education and frequency of drinking bottled water (Table-2). In fact, the level of education, income and lifestyle are connected. In general, people with higher education earn high and live a better life compared to people with lower education and lower income. Only 7% of the consumers with primary education drink bottled water every day, which multiplies by more than four times for the consumers with post-graduation and higher educational qualifications.

Table - 2: Correlations

		What is your preferred volume of bottled water?	Age	Highest Education	Monthly Income	How often do you drink bottled water
Pearson Correlation	What is your preferred volume of bottled water?	1.000	.189	.044	.063	.094
	Age	.189	1.000	.391	.577	-.075
	Highest Education	.044	.391	1.000	.584	.109
	Monthly Income	.063	.577	.584	1.000	.133
	How often do you drink bottled water	.094	-.075	.109	.133	1.000
Sig. (1-tailed)	What is your preferred volume of bottled water?		.000	.133	.054	.008
	Age	.000		.000	.000	.028
	Highest Education	.133	.000		.000	.003
	Monthly Income	.054	.000	.000		.000
	How often do you drink bottled water	.008	.028	.003	.000	

Interestingly, it was found that in each income group about same proportion of consumers drink bottled water once a week. This probably reflects the weekend outing and dining culture in the major cities of Bangladesh to a specific group of consumers.

The study endeavors to explore buying behavior of consumers for bottled water. It has been found that shops in the residential vicinity and street side locations, popularly known as 'general stores' in Bangladesh are the major purchase point for bottled water. Close to half of the respondents, 49% consumers in this research, mention that they buy bottled water mostly from general stores. In terms of the purchase point, restaurants and cafés stood as the second popular point. Super market is more popular place for buying bottled water to female consumers than to their male consumers. It has been found that about 15% of the female consumers buy mineral water from super market, whereas only 5% male consumers do so. This may be because a large number of females prefer to go to super market conveniently located in Dhaka and Chittagong City to buy their household needs.

When asked about the reasons behind buying bottled water, 45% of the male respondents mentioned the product as healthier than other drinks, whereas 55% of the female respondents prefer bottled water because of convenience and portability. Again, the social structure and household activities can be connected here. As most of the women in Bangladesh do cooking at home regularly, they purify the water at home and thus female consumers consider water purified at home healthier than bottled water. Besides, senior consumers who are over 45 years old evaluate bottled water healthier than other drinks and young consumers, who belong to the age group of 16-25 years, prefer bottled water because of portability compared to hygiene factor.

The research also reveals that about two third of the respondents prefer bottled water of 500ml size, but one-fifth of the senior consumers, 45 years and above old, prefer the bottle of

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1 litre. On the other hand, 87% of the 16-25 years old consumers tend to prefer 500ml and 600ml bottle to other available sizes.

Brand preferences and future expectations

Although bottled water is available in more than dozens of brands, in this research respondents showed significant preference to the brand known as Mum. About two-third of the respondents mentioned Mum as their most preferred brand. Another brand, Fresh, takes second position with only 15% popularity. The researchers have not found differences in brand preference in terms of gender, age, income or educational background of the consumers. In the primary market survey, the researchers found that almost all the brands of bottled water (except the brand Evian) are very similar in terms of price and quality. Therefore, consumers' preferences do not vary according to income and age. This is the opportunity for bottled waters manufacturers to differentiate the product and create unique positioning in the market.

Consumers in this study showed strong brand loyalty to their current preferred brands. 48% of the male consumers and 50% of the female consumers are not willing to switch brand if other brands offer discount and promotion. Overall, 51% consumers will switch or may switch the brand. Senior consumers, showing their lower brand loyalty, are more ready to switch the brand. Interestingly, consumers are not willing to pay higher prices in case of brand switching. This is a golden gap for the bottled water manufacturers. The manufacturers can find out the factors for which the consumers will switch their current brands and the manufacturers can emphasize on capitalizing on those factors.

The next attempt in this research was to find out the influencing factors in buying the bottled water. It has been found that for most of the consumers, quality, brand name and availability have high influence, price and packaging have medium influence, and advertisement and promotion have the least influence on consumers' decision making process.

Consumers' perceptions and attitudes

Finally, the respondents were asked to express their opinion on eight statements following the 5-point likert scale. As seen in the Table-3, most of the consumers consider water purified at home of better quality than bottle water. It will be interesting to note that most of the consumers think bottle water is better than commercial fruit juices and carbonated soft drinks in terms of quality and health factors. However, there is some confusion among consumers regarding quality of bottled water in Bangladesh.

Table – 3: Consumers' Attitudes and Perceptions

Consumers' Attitude and Perception about Bottled Water	Strongly Agree (1)	Agree (2)	Neither agree nor disagree (3)	Disagree (4)	Strongly disagree (5)	Mean	Standard Deviation
Bottled water has higher quality standards (safer) than the purified water at home	11%	20%	22%	32%	14%	3.18	1.23
Bottled water is healthier than fruit juices	17%	66%	19%	21%	8%	2.66	1.20
Bottled water is healthier than carbonated drinks (soft drinks)	41%	40%	11%	6%	2%	1.90	0.99
The quality of bottled water is reliable	8%	32%	36%	18%	6%	2.81	1.01
I am satisfied with the taste of bottled water	12%	48%	24%	13%	3%	2.46	0.95
Bottled water is a good alternative to fruit juices in terms of quenching thirst	30%	42%	14%	11%	3%	2.16	1.07
Bottled water is a good alternative to carbonated drinks (soft drinks) in terms of quenching thirst	35%	36%	13%	12%	4%	2.16	1.15
I am confident that most of the bottled water brands in Bangladesh are of same quality.	10%	28%	22%	29%	12%	3.06	1.19

There were two different methods by which regression was carried out. In the first, all the independent variables were included regardless of their statistical significance in the model. The second method excluded the independent variables which are statistically insignificant.

Under the regular regression, the dependent variable was the volume of bottled water consumed. The independent variables were age, years of education, monthly income and frequency of bottled water consumption. It was found that:

1. For one tier year increase in age group, the amount of water consumed increases by 13.999 milliliters, holding all other independent variables constant. This independent variable (IV) had a P value of 0.000 which is less than 0.05 and hence is statistically significant and a t statistic of 5.397.

2. For one tier increase in years of schooling, the volume of water consumed to go down by 3.045 milliliters. This independent variable however had a P value of 0.724 which is greater than the allowed 0.05. The t statistic was -0.353. Hence, this predictor was statistically insignificant and that's why it was excluded in the later regressions using the stepwise method.

3. For a 1 taka increase of monthly income, the volume of water consumed decreases by 0.003 milliliters. Hence there is predicted to be a negative relationship. The P value for this independent variable is 0.086 which is statistically insignificant with a t statistic of -1.721

4. For a 1 bottle increase in bottled water consumption, the volume of water consumed increases by 6.717 milliliters. The P value in this case was 0.001 which is significant and the t statistic was 3.247 as shown in Table – 4.

5. The intercept was 337.669 milliliters

Table – 4:
ANOVAa

Model		Sum of Squares	df	Mean Square	F	Sig.
	Regression	13242923.450	4	3310730.862	9.247	.000b
1	Residual	229845113.644	650	358014.196		
	Total	243088037.094	650			

a. Dependent Variable: What is your preferred volume of bottled water?
b. Predictors: (Constant), How often do you drink bottled water, Age, Highest Education, Monthly Income

Coefficients[a]

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Correlations			Collinearity Statistics	
	B	Std. Error	Beta			Zero-order	Partial	Part	Tolerance	VIF
(Constant)	337.669	134.645		2.508	.012					
Age	13.999	2.594	.259	5.397	.000	.189	.208	.207	.639	1.566
Highest Education	-3.045	8.629	-.017	-.353	.724	.044	-.014	-.014	.652	1.533
Monthly Income	-.003	.002	-.093	-1.721	.086	.063	-.068	-.066	.501	1.996
How often do you drink bottled water	6.717	2.069	.128	3.247	.001	.094	.127	.125	.945	1.058

a. Dependent Variable: What is your preferred volume of bottled water?

On doing to stepwise method, the statistically insignificant variables were excluded from the regression before execution. In this case, the insignificant independent variable was years of schooling.

1. For a 1 year increase in age, the amount of water consumed increases by approximately 13.917 milliliters, holding all other independent variables constant. This independent variable (IV) had a P value of 0.000 which is less than 0.05 and hence is statistically significant and a t statistic of 5.391

2. For a 1 taka increase of monthly income, the volume of water consumed decreases by 0.003 milliliters. Hence there is predicted to be a negative relationship. The P value for this independent variable is 0.034 which is statistically insignificant with a t statistic of -2.125

3. For a 1 bottle increase in bottled water consumption, the volume of water consumed increases by 6.677 milliliters. The P value in this case was 0.001 which is significant and the t statistic was 3.234

4. The intercept was 298.403 milliliters.

There are a variety of inferences that can be made from this data. For this, only the results from the Stepwise regression will be used because it includes only the independent variables that are statistically significant. It is observed that as people get older, their preferences for bottled water increase. This may be because adults are more aware of the health risks that are posed by soft drinks and other forms of carbonated products. Moreover, the reason may be that as people in the city begin to eat out more, their consumption demand for bottled water goes up. This means that mineral water companies have to concentrate on restaurants and fast food chains as important sources of business.

Companies should also target their products more towards an older audience because age is a very important determinant of mineral water consumption and every year of age increases water consumption by about 14 milliliters. The relation between monthly income and water consumption is also an interesting one. This is because as income increases, water consumption tends to decrease by 0.003 milliliters. This may mean that bottled mineral water is an inferior good because its consumption decreases as income increases. There was also a relationship between the frequency of bottled water consumption and the amount consumed. This was quite expected from an intuitive point of view.

CONCLUSIONS AND RECOMMENDATIONS

The purpose of this research was to understand the consumer behavior for bottled water from the perspective of consumers' demographic, economic and social factors. However, there is still scope for further research by taking consumers from other cities and rural-urban comparison can be performed. Future researchers can also go for cross-cultural analysis both locally and internationally. The outcome of this research clearly shows that there are variations in consumer taste, preferences for and attitude toward bottled water. At the same time, the overall consumers' action and intends are homogeneous. However, the manufacturers of bottled water should look for the similarities and differences simultaneously and should try to fill the gap in the market by delivering the solutions to prevailing needs in the market. Future marketers can go for product differentiations with innovations in the core, actual or augmented products. As the research finds that currently half of the consumers are quite loyal to their preferred brands and the remaining half may switch, future players in the market can take the opportunity of brand switching by offering unique value proposition.

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