

Consumer Choice of Soft Drinks: A Causal Path Analysis

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ABSTRACT

This paper presents a framework for assessing consumer perceptions on soft drinks evaluation. This study clarifies the roles of perceived quality, perceived product attributes, perceived product availability and perceived product price in evaluating process of consumers' soft drinks choice. To test hypotheses, data were collected from 592 respondents. Data were analyzed via structural equation models using Amos 5.0. Results from structural equations analysis revealed consumer perceived quality in Bangladesh as shown in the model-fit. In particular, it was found that when consumers evaluate the quality of a product, they may retrieve the constructs directly related to quality. One of the shortcomings of this study is that variables like brand image, packing, advertising techniques may play important roles in understanding consumer perception about choosing soft drinks that were not included.

Keywords: Perceived quality, perceived product attributes, perceived product availability, perceived product price, size of the market, growth of the market, consumers' choice

Introduction

Carbonated beverage entered into Bangladesh market in the later part of 1980s. At that time, there were only a few companies in Bangladesh. But with the change of time and by western cultural influences it has become very popular in Bangladesh. By 2000, more than 12 Beverage Companies started business in Bangladesh and most of them are foreign companies (Bangladesh Beverage: 2006).

On the basis of an exclusive Franchise for Bangladesh from Pepsico USA, Transcom Beverage Limited manufactures the famous Pepsi range of beverages-Pepsi, 7up, Mirinda Orange, Mirinda Lemon, Slice and Soda. As a corporate citizen Pepsico believes that it has a responsibility contribute to the quality of life in the communities. TBL has put into action this philosophy through

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support of social agencies, projects and programs and the scope of this support is extensive and it has not been difficult to blend with this philosophy since the TRANSCOM group also followed such a corporate ideology.

AMCL market its products under the brand name PRAN that stands for Program for Rural Advancement Nationally. The Agriculture Marketing Co. Ltd. (AMCL) was incorporated in Bangladesh on 15th May 1985 as private limited company under the companies Act 1913 and subsequently on 2nd June 1993 the co. was converted into a public limited co. The shares of the co. were listed in Dhaka and Chittagong stock exchanges.

Initially PRAN had jam, Jelly and Pickle in its product line. In January 1995, production of orange juice and in June production of PRAN mango bottled juice started. PRAN now operates by having eight zones throughout the country. The zones are Dhaka Metro, Adjacent Dhaka, Comilla, Chittagong, Sylhet, Khulna, Barisal and Rajshahi. The company also has three more sub zones.

Virgin, the third most recognized brand in Britain is involved in planes, trains, finance, soft drinks, music, mobile phones, cars, wines, publishing, bridal, wear, etc. They created over 200 companies worldwide, employing over 25,000 people. Their total revenues around the world in 1999 exceeded US \$5 billion. They claim that their brand Virgin is now becoming the first global brand name of the 21st century.

National Beverage Industry Ltd., a unit of Sunman Group, first bought Bangladesh Suncrest. Initially the company used to produce eight flavors, but it is now continuing with five flavors. Suncrest was the company to introduce a 1.5 liter plastic bottle, which turned out to be a profitable step for them. It is called the Suncrest Mega. Its varieties are:

- i. Suncrest Cola
- ii. Suncrest Orange
- iii. Kickapoo Joy Juice

Royal Crown (RC) Cola made by the Royal Crown Cola Company is the third most popular Cola in America. It is a tasty, refreshing soft drink. In 1905, it was at first designed merely to meet the needs of grocery customers in a limited geographical territory.

In 1959, the company name changed to Royal Crown Cola. Royal Crown Cola company's technicians made what industry leaders term "The most amazing breakthrough in soft drink technological history." Royal Crown Cola Company was the first soft drink company to introduce a sugar free product in 1962 and it was the first company to introduce a salt/sodium free cola in 1980.

In early 70s, RC Co. decided to go for global reach and at that time a number of experienced soft drink people assembled to manage and direct the company's international efforts. Since then, RC Cola has been able to establish a viable base in the world market and it is currently sold in 63 countries through a network of 78 franchise bottling plants.

Purpose of the Study

The main purpose of this study is to find out the overall market position of soft drinks in Bangladesh. Different attributes of soft drinks like price, availability, perception of quality are used for investigating the process of consumer perception in Bangladesh. More specifically, this study has 3 primary objectives.

The first objective is to know the size and the growth of the market. As Bangladesh is a developing country and the most of the people live below the poverty line, size is an important factor for soft drinks companies. Growth has also been a vital concern of this study. The size and growth of the market depends on some criteria for evaluating the attributes of soft drinks.

The second objective is to address the overall mechanism of consumers' taste or choice of the market. In this study, it is predicted that different cues have direct effects on consumers' perception on soft drinks. To conduct the research it is essential to know the number of brands existing in the market with their market share.

The third objective is to discuss the implication of the above for urban and rural markets. It is expected that this study would substantially contribute to theoretical and managerial understanding of consumer perception about soft drinks in Bangladesh.

Hypotheses of the Study

Influence of price

Consumers often perceive price as an extrinsic quality cue (Dodds and Monroe 1985; Dodds et al. 1991). Several studies have searched consumer perception of price as an indicator of quality, and many of these have shown price to operate in this manner (Erickson and Johansson 1985). Consumers perceive price in evaluating product choice, because they often are unable to detect the actual choice of a product before purchase. This view is analogous to the role of other extrinsic cues, such as, attributes, availability or perception of quality on consumers' choice about soft drinks. When consumers face a product associated with affordable price, they will infer positive impression about that product, even though the product is not belonging to the same product in that the consumers already have use experience. The hypothesis is:

H₁: Price of soft drinks has a direct positive effect on the consumer soft drinks choice.

Attribute Influence

If consumers are familiar with the attributes of a product, they will be less likely to rely on brand image as one of the extrinsic cue on what consumers usually depend. According to Aaker (1991), "If consumers lack the ability to judge products; they often rely on seemingly trivial but observable attribute to judge overall quality." Most of the soft drinks now available in the market have different attributes which influence consumers in their preference. Sometimes soft drinks companies try to introduce new attributes by changing taste, color, or packing. But it does not seem that always new attributes can attract consumers' mind. For example, when Pepsi Company introduced 'Blue Pepsi' in Bangladesh market, consumers did not like the flavor/ taste. That means, sometimes consumers prefer the old attributes of the product with which they are habituated. So, every company should be conscious about consumers' choice, preference and expectations.

H₂: Perceived product attributes of soft drinks have a direct positive effect on the consumers' soft drinks choice.

Impact of availability

Consumers often perceive availability of soft drinks as a cue to choose the product. It is important to ensure that the consumers will get the product when they desire it. As a soft drink is not an expensive product; so consumers always want to get it in every retail shop. Every consumer has their own preference to choose the brand; so the question will arise: "Is consumers' preferred brand available whenever they want to buy that?" The positive responses will develop into favorable evaluation toward the brand. The opposite will happen in case of negative responses.

H₃: Availability of a soft drink has a direct positive effect on the consumer soft drinks choice.

Influence of perceived quality

The perceived quality has received considerable attention in the marketing literature (Chowdhury & Islam, 2003; Holbrook & Corfman, 1985; Jacobson & Aaker, 1987; Olshavsky, 1985). Quality is the ability of a product to satisfy a consumer's needs and requirement (McCarthy & William, 1991). Quality is the totality of features and characteristics of a brand based on its ability to satisfy stated and implied needs (Chowdhury & Parvin, 2006). Consumers may use perceived quality information to evaluate a brand when the consumers do not have sufficient knowledge of intrinsic cues. Several studies have searched consumers' perception of quality as an indicator of their preference. We should not forget that consumers serve the ultimate judge of quality in the marketplace. While introducing a new product, well reputed organizations may fail if it does not fit consumers' perceptions of high quality. To identify how consumers perceive quality is a difficult task.

H₄: Perception of quality of a soft drink has a direct positive effect on the consumer soft drinks choice.

Research Methodology

Subjects & Sampling

The data were collected from both primary and secondary sources. The secondary data sources include internet articles, some foreign and local websites on

beverages. Most of the data required for the study were collected from primary source through structured questionnaire. A total of 592 data were obtained from the respondents. Briefly, the male-female ratio is around 3 to 1 (male=73.7% Vs female=25.9%)

Different occupational people are used as sample of this study. To conduct the research 7 divisions of Bangladesh were selected by the researcher. Data have been collected based on simple random sampling procedure.

Data Collection

A questionnaire was served as a data-gathering instrument. A total of five brands of soft drinks were used for the study. The first part of the questionnaire contained demographic questions related to the respondents. It is important to know the general information of each respondent. The second part of the questionnaire is related to the choice/taste of the consumer. This part contained different brands and flavors of soft drinks which the consumer can choose from the market. The following pages contained the scale items of those measures needed to test the proposed model. Most subjects spent between 10 & 15 minutes for filling in the entire questionnaire.

Variables and Their Measurement

After first specifying the domain of each construct multiple item scales were developed, as suggested by Churchill (1979). Consumer quality perception was assessed using thirteen measure scales developed by Lee (1994) and these were again validated for this study. Perceptions of product attributes were based on scales developed by Zaichkowsky (1985) and Laurent and Kapferer (1985). Consumers' perception of product price and availability was based on the items developed for this study.

Plan for Data Analysis

The ultimate intent of this study was to test a model of consumer value perceptions and to estimate the parameters for the structural model depicted in figure 1. Thus, data were analyzed via structural equation models using AMOS (Analysis of Moment Structures) 5.0 to perform path analysis. AMOS is a computer program for estimating the unknown coefficients within a system of structural equations,

and is but one of the several computer-based covariance structure models for conducting such analysis.

The data were analyzed in two stages. The measurement model was assessed to confirm that the scales were reliable. When the reliability of the measures had been established, the structural model was tested. The evaluation of structural equation models is more commonly based on a likelihood test. The assumption is that the null hypothesis (H_0) is the observed covariance matrix (S) that corresponds to the covariance matrix derived from the theoretical specification (Σ) and that the alternative hypothesis (H_1) is that the observed covariance matrix is any positive definite matrix. For these hypotheses, minus twice the natural logarithm of the likelihood ratio simplifies to:

$$N * F_0 \sim \chi^2 \left[\frac{1}{2} (p+q)(p+q+1) - Z \right]$$

Where:

N = the sample size

F_0 = the minimum of fitting function $F = \log|\Sigma| + tr(S \Sigma^{-1}) - \log|S| - (p+q)$,

Z = the number of independent parameters estimated for the hypothesized model,

q = the number of observed independent variables, and

p = the number of observed dependent variables

The null hypothesis ($S = \Sigma$) is rejected if $N * F_0$ is greater than the critical value for chi-square at a selected significance level.

The linear structural equation is:

$$B\eta = \Gamma\xi + \zeta$$

Where:

B = An $(m+m)$ coefficient matrix ($\beta_{ij} = 0$ means that η_j and η_i are not related),

Γ = An $(m+n)$ coefficient matrix ($\gamma_{ij} = 0$ means that η_i is not related ξ_j)

η = An $(m+1)$ column vector of constructs derived from the dependent variables (y),

$\xi = A_n (m+1) = A_n$ column vector of constructs derived from the independent variables (x),

$\zeta = A_n (m+1) = A_n$ column vector of the errors in the structural equations,

The number of constructs (latent variables) developed from the observed dependent variables, and

$m =$ The number of constructs (latent variables) developed from the observed independent variables.

The measurement equations are:

$$y = \Delta_y \eta + \epsilon$$

and,

$$x = \Delta_x \xi + \delta$$

Where:

$y = A (p+1)$ column vector of observed dependent variables,

$x = A (q+1)$ column vector of observed independent variables,

$\Delta_y = A (p+m)$ regression coefficient matrix of y on η ,

$\Delta_x = A (q+n)$ regression coefficient matrix of x on ξ ,

$\epsilon = A (p+1)$ column vector of errors of measurement in y ,

$\delta = A (q+1)$ column vector of errors of measurement in x ,

$\Psi =$ The $(m+m)$ covariance matrix of ζ ,

$\Phi =$ The $(n+n)$ covariance matrix of ξ ,

$\theta_\epsilon =$ The $(p+p)$ covariance matrix of ϵ , and

$\theta_\delta =$ The $(q+q)$ covariance matrix of δ .

This testing determined the strength of individual relationships, the model's goodness of fit, and the various hypothesized paths.

Results

Results of the Measurement Model

The first step of the data analysis was a test of the measurement model. Objectives of this test were: (1) to contain the validity and reliability of measures developed and tested in previous phases of the study; and (2) to select the best subset of observed measure for use in testing the structural model. The data approximated a normal distribution with acceptable skewness and kurtosis values. The measurement test proceeded in a manner identical to the procedure discussed in the previous chapter. Coefficient alpha was computed for each set of observed measures associated with a given latent variable, and a confirmatory factor analysis (CFA) was conducted. Alpha values of each item in each dimension were performed separately and were within an acceptable range (see Table 1). Because of the large number of items used to measure the dimensionality of most of the constructs, responses of these items were averaged to form a single measure for each of the dimension.

Table- 1: Values of Coefficient Alpha

Constructs in the Model	Total Items	Alpha Value
Consumer Evaluation (CE)	4	0.84
Perceived Quality (PQ)	2	0.89
Perceived Product Attributes (PPA)	3	0.88
Perceived Product Availability (PA)	2	0.71
Perceived Product Price (PPP)	2	0.73

Results of Overall Model Fit

Bagozzi and Yi (1988) have pointed out that “one of the first things that should be done before examination of the global criteria is to see if any anomaly exists in the output (p.76).” Examples of anomalies that exist in the output are: (1) negative estimates for the variances, (2) correlation estimates greater than 1, and (3) extremely large estimates for the parameters. None of these anomalies were present in the output of the analysis.

The model fits the data well, producing a non-significant chi-square value (Chi-square = 65.87; $df = 55$; $p = 0.15$), a goodness-of-fit index (GFI) of 0.95, adjusted goodness-of-fit index (AGFI) of 0.97, Root Mean Square Residual (RMR) of 0.03, Akaike Information Criterion (AIC) of 137.87, CFI = 0.99, RMSEA = 0.02, and, BIC = 368.89.

Tests of Hypotheses

All the path coefficients are significant and are consistent with the hypothesized direction (see Table-2). Hypothesis 1 (H1) states that perception of price (higher price compared to lower price) would have positive effect on the consumer choice of soft drinks. The results support this hypothesis as the path between perceived product price (PPP) and consumer evaluation (CE) is significant ($\gamma = 0.004$, $p = 0.04$). Hypothesis 2 (H2) states that the evaluation of consumer choice will be positively affected by the perception of favorable product attributes. That is, if consumers perceive the product as unique, then it will boost up consumers' perceptions of the product's overall quality. The structural equation results support this hypothesis: the direct effect of perceived product attribute (PPA) on consumer evaluation is positive and significant ($\gamma = 0.35$, $p = 0.05$). Hypothesis 3 (H3) states that the evaluation of consumer choice will be positively affected by the perception of product availability. Specifically, when consumers purchase a product which is available when they desire it, they will infer positive impression about that product. The direct effect of perceived product availability (PA) on consumer evaluation is positive and significant ($\gamma = 0.12$, $p = 0.06$). In hypothesis 4 (H4), the prediction was that perceived quality would have a direct positive effect on consumer choice of soft drinks. That is, when consumers face a product associated with a perceived high quality, their impression toward the product will be positive. The direct effect of perceived quality on consumer evaluation is positive and statistically significant ($\gamma = 0.16$, $p = 0.05$).

Table- 2: Structural Model Estimation Results

Hypotheses	Parameter (From – To)	Estimate (Significant at)	Fit Indices
Exogenous to endogenous			Chi Square: 65.87
H1:	PPP to CE	$\gamma = 0.004$ ($p = 0.04$)	$df = 55$ $p = 0.15$
H2:	PPA to CE	$\gamma = 0.35$ ($p = 0.05$)	GFI: 0.95
H3:	PA to CE	$\gamma = 0.12$ ($p = 0.06$)	AGFI: 0.97
H4:	PQ to CE	$\gamma = 0.16$ ($p = 0.05$)	RMR: 0.03 AIC: 137.87 CFI=0.99 RMSEA=0.02 BIC=368.89

Conclusion

Results of this study substantially contribute to theoretical and managerial understanding of consumer evaluation formation process in Bangladesh. At the theory level, this study has produced greater understanding of the variables that appear to be most responsible for structuring consumer choice of soft drinks. In other words, the model as a whole means that when a consumer evaluates the quality of a product, s/he may retrieve the constructs directly related to quality.

In this study, consumers' soft drinks choice process was tested using some exogenous variables. Mainly this study was conducted for developing a theory. This study recognized and conceptually defined four perception related constructs. The four constructs are perceived price, attributes, availability and perceived quality. This study measured the effects of price, attributes, availability and quality information on how individuals subjectively choose a soft drink brand.

This study states that beverage is very popular in Bangladesh. Among different age groups, young generation (age between 16-25) likes to take soft drinks more. 7up is the most favorite beverage among all the soft drinks products available in Bangladesh. Findings of the analysis show that family income of more than Tk.10000 prefer to take beverage daily. Majority of the respondents (70%) prefer to take beverage in lunch time. Students are the main consumers of beverage product.

Limitations and Future Research

The investigation of consumer evaluation of soft drinks is crucial to both researchers and marketers. This study has emphasized that much additional research remains before a thorough understanding of consumer choice can be achieved. Thus, this research indicates that there is great potential for developing more sophisticated models of consumer evaluation formation process.

There are some limitations in this study and thus future research should continue to test and to refine relationships investigated in the present study and variables that moderate them. More specifically, this study suggests two fertile directions for future research. Firstly, it is clear that future research is required to yield a complete understanding of the phenomena surrounding consumer evaluation criteria. This study attempted to outline major variables that logically and theoretically should impact the linkages in consumer evaluation scenarios in Bangladesh.

Many of the areas requiring research have been highlighted in the preceding pages, but there are certainly others that remain unearthed. The additional variables, yet to be identified, may play important roles in understanding consumer perception about choosing soft drinks. Brand image, packing, various advertising techniques should also be examined in the same research setting in addition to the constructs considered in this study. By building on the substantial search for literature already available and by incorporating these additional variables our understanding and the perception of consumer evaluation process to provide substantial insights into consumer decision-making will be greatly enhanced. It is hoped that the proposed relationships and accompanying tests will stimulate work in the area of consumer soft drink choice.

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