

# Influence of Bottled Water Packaging Attributes on Consumers' Purchase Decision: Case study in Addis Ababa

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## Abstract

The purpose of this study was to identify the influence of bottled water packaging attributes on consumers' purchase decision. The research focused in Addis Ababa (Ethiopia). The study used color, graphic design, size, printed information and shape of packaging as independent variables and consumers' purchase decision as a dependent variable. This empirical research was conducted using survey through a set of questionnaire with 5-point likert scale and open-ended items. The questionnaire was distributed to 200 respondents and the responses from 96.5% of the respondents were analyzed using descriptive and inferential statistics such as mean, correlation and multiple regression. The findings of the study show that color, graphic design, size and shape of packaging significantly influence consumers' purchase decision for bottled water. Printed information on the package has no significant influence on consumers' purchase decision. Therefore, manufacturers of bottled drink water should give attention to packaging attributes and be innovative to win consumers' attention. Using attractive and easily understandable printed information may increase its influence on purchase decision.

**Keywords:** packaging, bottled water, purchase decision

## 1. Introduction

Consumer decision identifies at least two types of decision making (Haugteued, Herr and Kerdes, 2008). The first involves deliberative decision making with the classic five stages: problem recognition, information search, alternative evaluation, purchase decision and post-purchase behavior. When consumers have limited processing resources, they may pass directly from problem recognition to purchase decision to the post-purchase phase, using affective feeling to direct their choice process. The second type of decision making is affective/experiential. This involves intuitive, automatic, associative, and fast decisions.

A straightforward and literal definition of packaging<sup>1</sup> is "all products made of any materials of any nature to be used for the containment, protection, handling, delivery and preservation of goods from the producer to the user or consumer. Many products use packaging to create a distinctive brand image and identity (Belch and Belch, 2003). Packaging includes all the activities of designing and producing the container for a product. Packages might have up to three layers. Cool Water cologne comes in a bottle (primary package), in a cardboard box (secondary package), and in a corrugated box (shipping package) containing six dozen bottles in cardboard boxes. The package is the buyer's first encounter with the product. A good package draws the consumer in and encourages product choice (Kotler & Keller, 2012).

Packaging is not a single thing; it is rather a combination of different attributes. Consumers subconsciously assign their preferred color, shape and basic material(s) used in the containers. Deliya & Parmar (2012) identified color, background, image, packaging materials, font size, design of wrapper, printed information and innovation as attributes consumers attach to packaging. On the other hand, Kuvykaite, Dovaliene and Navickiene (2009) classify the packaging attributes in to two. These are verbal and visual packaging attributes. Verbal packaging attribute consists of product information, producer, country-of-origin, and brand. Visual packaging attributes have graphic, color, size, form, and material as attributes.

Changes in ways of life also explain this boost of bottled water sales. Increasing urbanization and causing tap water quality to decline

can explain this situation. In particular, natural mineral water cannot be treated nor add any element (Ferrier, 2001). Purified water is surface or underground water that has been treated in order to be suitable for human consumption. It differs from tap water only through the way it is distributed (in bottles rather than through pipes) and its price (Ferrier, 2001).

## 2. Statement of the Problem

Different researchers tried to explain the packaging attributes in different ways. However, the influence of those attributes is not well studied. Even if some research pieces were conducted in this area, the majority of them focused on the packaging of food items. According to Ethiopian Business Development Services Network (EBDSN) (2013), Manufacturing is now at an early stage of development and currently accounts for about 7 per cent of the GDP and 5.3% of employment. It covers about 145 state-owned and 643 private manufacturing

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<sup>1</sup>Package and packaging for this study is synonymies

industries of all sizes. Following the government actions to enhance industrialization, different local and foreign investors have started producing and selling bottled water in different parts of Ethiopia. Different bottled drink water manufactures are established around Addis Ababa and other different cities of the country, such as Mekele, and Dire Dawa.

The number of users of bottled water seems to increase from time to time. Middle income people enjoying such product are increasing. According to Deliya & Parmar (2012), in a competitive environment, the role of packaging has changed due to increasing self-service and changing consumers' lifestyle. Firms' interest in package as a tool of sales promotion is growing increasingly. Package becomes an ultimate selling proposition stimulating impulsive buying behaviour, increasing market share and reducing promotional costs. Package attracts consumers' attention to a particular brand, enhances its image, and influences consumers' perceptions about product. Also, package imparts unique value to products as a tool for differentiation i.e. it helps consumers to choose the product from wide range of similar products and stimulates consumers' buying behavior. Thus, packaging plays an important role in marketing communications and could be treated as one of the most important factors influencing consumers' purchase decision.

Therefore, this research stands to investigate the influence of those packaging attributes such as color, shape, size, printed information and design on consumers' purchase decision. The paper does not focus on the general packaging, but the specific packaging attributes of bottled water and their influence on consumers' purchase decision. So, the study intends to identify the influence of packaging attributes on the consumers' purchase decision. Accordingly, the study attempts to find answers to the following research questions.

Q1: Does the packaging color of bottled water affect consumers' purchase decision?

Q2: Does the packaging size of bottled water influence consumers' purchase decision?

Q3: Does the graphic design of packaging influence the consumers' purchase decision?

Q4: Does the shape of bottled water influence the purchase decision of consumers?

Q5: Does the printed information influence the consumers' purchase decision for bottled water?

### **3. Objectives of the Study**

The general objective of the study is to examine the influence of packaging attributes on consumers' purchase decision for bottled water. The specific objectives of the study are:

- ❖ To identify the relationship between packaging attributes and consumers' purchase decision of bottled drink water.
- ❖ To investigate which packaging attributes of bottled water are more influential for the purchase decision of consumers.
- ❖ To identify multiple effect of packaging attributes on consumers' purchase decision.
- ❖ To see the contribution of each attribute of packaging on consumers' purchase decision.

## **4. Review of Related Literature**

### **4.1. Consumer Behaviour and Purchase Decision Process**

According to Kotler, et al. (1999), normally the amount of consumer search activity increases as the consumer moves from decisions that involve limited problem solving to those that involve extensive problem solving. Consumer behavior reflects the totality of consumers' decisions with respect to the acquisition, consumption, and disposition of goods, services, activities, experiences, people, and ideas by (human) decision-making units (Hoyer & MacInnis, 2010).

Much of the effort that goes into a purchase decision occurs at the stage in which a choice must be made from the available alternatives. After all, modern consumer society abounds with choices. In some cases, there may be literally hundreds of different brands or different variations of the same brand (Solomon, Bamossy, Askegaard, & Hogg, 2006). All consumers will differ to some extent in what they buy, why they buy, who makes the purchase decision, how they buy, when they buy and where they buy. Some of these differences may be explained at the lifestyle level and less so on the national level and some are very obviously related to national or regional differences. Since some purchase decisions are more important than others, the amount of effort we put into each one differs (Solomon, et al, 2006).

The consumer typically passes through five stages: problem recognition, information search, evaluation of alternatives, purchase decision, and post purchase behavior. Clearly, the buying process starts long before the actual purchase and has consequences long afterward. Consumers don't always pass through all five stages—they may skip or reverse some (Kotler & Keller, 2012).

### **4.2. Packaging**

Packaging includes the activities of designing and producing container for a product. The container is called the package, and it might include up to three levels of material (Kotler, 2002). Packaging involves designing and producing the container or wrapper for a product. Labeling printed information appearing on or with the package

is also part of packaging. The package is the buyer's first encounter with the product and is capable of turning the buyer on or off (Kotler and Keller, 2006).

The core elements of a product are its shape, quality, color, quantity, packaging, price, brand name differentiation, etc. (Khan, 2006). On the other hand, Brands are important symbols, often using more than one sign system to create meaning; the brand name, the logo, the color and the design of the packaging all contribute (Blythe, 2005).

Colors are rich in symbolic value and cultural meanings. For example, the display of red, white and blue evokes feelings of patriotism for both British and French people. Such powerful cultural meanings make color a central aspect of many marketing strategies. Color choices are made with regard to packaging, advertising, and even shop fittings (Solomon, 2006). The effective use of color in packaging design can be a highly involved decision due to the various connotations, associations and messages that colors can send out. Color meanings are wide and varied and perhaps most significantly culturally dependent. Certain packaging colors refer to particular tastes or qualities, with pink and red indicating sweetness for example, while white and blue suggest purity and refinement. The color green typically refers to mint flavoring or organic produce, while to attract attention to 'new' or 'improved' products or formulas, designers frequently use red and yellow.

Each of these routes has its own advantages. Typography is essentially descriptive; that is, you can easily explain to someone what the product is, or what its core values are. Photography is often used in an inspirational way, to convey a sense of ambition, or to show the detail and quality of a product. Meanwhile, illustration can allow the unimaginable to be imagined. In reality, one or more of these approaches is normally employed in a design scheme, and the boundaries between these disciplines can often be blurred or crossed. Typography is often treated as image, being manipulated and altered to create graphic effect. Illustration and photography can also merge; overt manipulation can be used to make the real (a photograph, for instance) appear hyper real or fantastical in its outcome. The size and style of the lettering on a product or in an ad can attract attention and support brand recognition and image. The distinctive Wendy's script, for instance, is eye-catching and instantly identified with the name of the hamburger chain (Hoyer & MacInnis, 2010).

The amount of consumption can sometimes be increased through packaging or product design. Larger package sizes have been shown to increase the amount of product that consumers use at one time. The usage of "impulse" consumption products such as soft drinks and snacks increases when the product is made more available.

Size attracts attention. When choosing among competing products, consumers tend to buy products in packages that appear to be taller than others; even the ratio of the dimensions of rectangular products or packages can subtly affect consumer preferences. Moreover, consumers perceive that packages in eye-catching shapes contain more of a product (Hoyer & MacInnis, 2010).

One function of packaging is to act as a surface upon which to apply the text and images of a design. The information to be communicated via packaging is a mixture of statutory information, such as weights and measures; general information, such as ingredients contained within a given product; and information that consumers are increasingly demanding, such as details about the recycled content and recyclability of the packaging, as well as about the ethical credentials of a brand (Ambrose and Harris, 2011). All the information on the packaging of a branded grocery item would represent in excess of 100 bits of information. Researchers have shown that, at most, the mind can simultaneously process seven bits of information (Baker, 2003).

Packaging design can be perceived as a more ruthless design sector than others, as ultimately it has to result in generating sales and making money for the client, which is what they crucially expect to result from the design and is often their main purpose for producing a product. Packaging design has to quite literally deliver the goods, or a product is highly likely to fail (Ambrose and Harris (2011). The main driver when designing packaging for solo products is relatively simple, in that you are designing something that has to stand out from other products in the segment of the market within which it will be positioned and next to which it will be physically displayed (Ambrose and Harris, 2011).

How simplicity in packaging design can help a brand to stand out among its competitors. Simplicity can involve reducing copy and highlighting only specific product features or values, or making a cleaner design with fewer graphic devices in order to streamline the communication. Creating minimalist designs of white space and sparse typography can also be perceived of as both cheap and generic, however. 'There is danger in taking the call for white space a bit too literally,' assert Young and Asher. Therefore, it is important to balance the use of background space with the strong use of color and/or dynamic visuals. Creating designs that have simplicity can be achieved by focusing on specific elements, as in the examples outlined below (Ambrose and Harris, 2011).

## 5. Research Methods

The study was conducted using survey, more specifically, Cross-sectional field survey. The independent and dependent variables were measured at the same point.

### **5.1. Sample and Sampling Techniques**

This research focused on the influence of packaging attributes on consumers' purchase decision in Addis Ababa. This indicates that the participants of the research were mainly individual consumers. As a result, the units of analysis for this research were individuals. On the other hand, the sample frame of this research is individual consumers drinking bottled water in Addis Ababa.

The sampling method for the research was non-probability convenience sampling. Even if the total population of the study is unknown, 200 respondents were selected for the survey. The respondents for the questionnaire were 15 years old and above, because the researcher believed that individuals start to exercise their freedom of making purchase decisions at this age. Both male and female respondents took part in the data collection process.

### **5.2. Source of Data Collection**

The study used primary data obtained through the questionnaire. Before using the questionnaire to collect data, it was piloted in order to check its reliability. The finding shows that Cronbach's Alpha is 0.903 for Independent variable and 0.73 for dependent variable.

### **5.3. Data collection procedures**

The procedures of data collection from the respondents were that, first, individual respondents were asked whether they were buyers of bottled water or not. Then, those who confirmed that they used bottled water were requested to fill in the questionnaire. The places of data collection for this research were different cafeterias and supermarkets. Permissions were received from the owners or managers of the cafeterias and supermarkets first. Then, the questionnaires were distributed to respondents.

### **5.4. Method of Data Analysis**

Basically this is an empirical research which states some hypothesis for the purpose of answering the main problem. For the demographic part of the research, the data were analyzed by using descriptive method such as tabulation and percentage. For the second part of the research analysis, the data were analyzed by using descriptive, correlation and multiple regression in order to see their relationship and the influence of those packaging attributes on consumers' purchase decision. In order to test the hypothesis multiple regression was used. In addition to this, correlation descriptive statistics was used to show the relationship between the dependent and independent variables.

## **6. Results and discussion**

The finding shows that the color of the package has significant influence on consumers' purchase decision. The color of the package positively correlates with consumers' purchase decision. In 2012, Deliya and Parmar conducted research on the role of packaging on consumers' buying behavior. The result of their study indicates that the color of the packaging has positive and significant relationship with consumers' buying behavior. Using attractive colors on the packaging can grasp the consumers' attention. When manufacturers use colors they try to use attractive color on the pictures, labels and caps of the package.

The findings of this study show that the packaging design of bottled water significantly influences the consumers' purchase decision. Baik, Suk, Suh, and Kim (2011) also analyzed the relative importance of each visual element of packaging. They found out that it was statistically significant that consumers were most affected by "Typography". This suggests that the change of the typography can achieve better effect on consumers. Deliya and Parmar (2012) also show that consumers' buying behavior and design of wrapper have positive and significant relationship. This means that using attractive design for package positively influences the consumers' buying behavior.

The finding of the study shows that packaging size positively influences consumers' purchase decision. The amount of consumption can sometimes be increased through packaging or product design. Big packaging size influence customers to consume more, but they are not willing to hold it when they are move from one place to another. They want it to consume at a time when their need is raise. The usage of "impulse" consumption products such as soft drinks and snacks increases when the product is abundantly available (Kotler and Keller, 2006). The finding of Agoriya (2012) shows that the size of package has significant impact on consumers' buying behavior and the relationship is positive. Significant linear relationship exists between consumers' interest for a package and size of package, which indicates that the consumers' purchase decision and packaging size are positively correlated. Their finding is similar with the finding of this study. The customers prefer to purchase small size bottle than big one because, they can finish it at a time their need is rise. They don't want to hold it for another time.

Previous study of Deliya and Parmar (2012) shows that printed information has significant relationship with consumers' buying behavior. Their study indicates that printed information on a package is positively and significantly related with consumers' buying behaviors. In 2007, Silayoi and Speece conducted a study on the importance of packaging attributes and found out that precise product information has a positive utility while the

vague presentation of information had a negative utility. This indicates that consumers value the product information on food labels, and the result conforms to prior studies from other countries. The result also suggests that consumers evaluate product quality using concrete information, not purely by the image.

From other attributes, shape of packaging is the most influential attribute in consumers' purchase decision. Consumers' give high attention to the shape of the package when they purchase bottled water. In 2004, Silayoi and Speece conducted research on packaging and purchase decisions. Their finding shows that package shapes help to make products more appealing.

According to Sioutis (2011), the finding of the study on effects of package design on consumer expectations of food product healthiness shows that the "shape" attribute is the only one that differs significantly. Consumers prefer square/ box shape for the cereals while they prefer curvy/round shape for the juices. This highlights the fact that "shape" acts as a super attribute.

#### Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.692a	.479	.465	.615

a. Predictors: (Constant), shape, information, color, size, design

b. Dependent Variable: Consumers' Purchase Decision

In above table, the R, which represents the multiple correlation coefficients between predictor and outcome, is 0.692. R square indicates us 47.9% of the dependent variable (customers purchase decision) can be predicted from independent variables. Adjusted R square indicate the loss of predictive power or shrinkage (the difference between the values is  $0.692 - 0.479 = 0.213$  about 21.3%). Whereas R2 tell us how much of the variance in dependent variable is accounted by the regression model from the sample, the adjusted value tell us how much variance in dependent variable would be accounted for if the model had been derived from the population from which the sample was taken.

#### Coefficientsa

Model		Unstandardized Coefficients		Standardized Coefficients	T	Sig.	Collinearity Statistics	
		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	-.036	.274		-.131	.896		
	Color	.139	.054	.160	2.570	.011	.727	1.376
	Design	.181	.070	.182	2.575	.011	.566	1.766
	Size	.175	.082	.138	2.145	.033	.686	1.458
	Information	.080	.058	.081	1.381	.169	.820	1.219
	Shape	.370	.054	.406	6.884	.000	.812	1.232

a. Dependent Variable: Consumers' Purchase Decision

As clearly shows in the above table that packaging color, design, size and shape have significant effect on consumers' purchase decision. However, printed information on packaging has no significant impact on consumers' purchase decision.

The specified regression equation takes the following form.

$$Y = \beta_0 + \beta_1 (PC) + \beta_2 (PD) + \beta_3 (PS) + \beta_4 (PPI) + \beta_5 (PSH)$$

Where

**Packaging color = PC, Packaging Design = PD, Packaging Size = PS, Packaging Printed Information= PPI and Packaging Shape = PSH**

So, the equation comes as

$$\text{Consumer Purchase Decision} = -0.036 + 0.139 (PC) + 0.181 (PD) + 0.175 (PS) + 0.08 (PPI) + 0.370 (PSH)$$

The significance levels of packing color, graphic design, size, printed information and shape are .011, .011, .033, .169 and .000, respectively. This test shows that the coefficients of the predictor are statistically significant at less than five percent level of significance. Therefore, we will reject the Ho and accept H1 for the hypotheses 1, 2, 3, and 5. However, hypothesis 4 shows that the predictor is not statistically significant at less than five percent level of significance.

The B- values tell us about the relationship between consumers' purchase decision and each predictor. If the value is positive we can tell that there is positive relationship between the predictor and the outcome whereas a negative coefficient represents negative relationship. For these data, all the five predictors have positive B- value, which indicates positive relationship. However, printed information of packaging has weak relationship with

consumers' purchase decision and the significance level of this variable is 0.169, which is greater than 5% confidence interval. Therefore, the alternative hypothesis for this variable is not accepted as color, size, design and shape of packaging for bottled drink water increase the consumers' purchase decision.

Each of these beta values has an associated standard error that indicates to what extent these values would vary across different samples, and these standard errors are used to determine whether or not the B-value differs significantly from zero.

The B- values and their significance are important statistics to look at. The standardized beta value tells us the number of standard deviations that the outcome will change as a result of one standard deviation change in the predictor. The standard deviation units are directly comparable; therefore, they provide better insight in to the importance of a predictor in the model. The standardized beta value for shape is 0.406. This indicates that this variable has relatively strong degree of importance for consumers' purchase decision than the others. The standardized beta value for color, design and size are 0.160, 0.182 and 0.138, respectively. This indicates that these three variables have a comparable degree of importance in the model.

## 7. Conclusion

Results of research on the influence of packaging on consumer's purchase decision stipulated following conclusions: Package could be treated as one of most valuable tool in today's marketing communications, necessitating more detail analysis of its elements and an impact of those elements on consumers purchase decision.

Appropriate and vivid picture or packaging color which delivers them a happy feeling, or an easy handle/ open/ dose/ dispose package shape. All these elements contribute each important effort to catch consumers' attention and interest. Besides each element's single function, the researcher thinks that a good combination of those elements may let the product more eye-catching and attractive. It has revealed that attributes of package are the most important for consumer's purchase decision. For a major part of consumers' a shape and design are the main important attribute, while printed information is also less important attributes of packaging when customers purchasing bottled drink water.

When customers purchase bottled drink water they focuses on the design of the package. The design of package includes the graphics, attractive pictures and font style on printed information. The result of the finding shows that there is positive moderate relationship between packaging design and customers purchase decision. Packaging design significantly influence customers purchase decision. On the other hand the size of the package which means the smallest size influences customers to purchase decision than the biggest one. This shows us the size of bottled water packaging positively correlate with customers purchase decision. Like other packaging attributes, size significantly influence customers purchase decision. Printed information's on packaging use to inform customers about the water content, source, production and expired date and other important things. However, this printed information is weak positive correlation with the customers purchase decision. Customers want to show such information on the product but it is not significantly influence customers purchase decision. However, printed information is important for other products.

The shape of bottled water is one of the most important packaging attributes in order to influence customers purchase decision. This attributes relatively high correlation with the customers purchase decision than the other attributes. The finding shows that the shape of the package significantly influence customers purchase decision for bottled drink water. This attribute has highest influence on customers purchase decision than the others.

When customers make purchase decision on bottled drink water, they dominantly use the packaging attributes to select one product from the others. Some other customers also use other variables to select products. Producers also know this intention of the customers. So they always try to follow the wants of the customers on the product test, packaging color, shape, and other related things. This show us how much the package of bottled water are used to influence the customers purchase interest and win the completion in the market. Producer gives high attention for those packaging attributes. However, their creativity effort on the attributes is less.

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