Factors Affecting Customers' Preference of Packaged Water in the case of Packaged Water Industries in Addis Ababa

Research Report Submitted for the Partial Fulfillment of the Requirements for the Degree of the Masters in Marketing Management

By: Ruth Kassaye

Advisor: GETE ANDUALEM (PhD)

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Abstract

Review of literature shows that the consumption of bottled water is increasing all over the world, especially in the developing economies, the increment is more substantial. Research results also show that the factors that influence the consumers' buying behavior of bottled water varies culturally and geographically. Consequently, the objective of the current study is to examine the factors behind customer consumption behavior of bottled water and to understand how they make their choices among the many brands available. The current study employed quantitative research approach and utilized correlational and descriptive research design and cross-sectional survey method of data collection using a self-report questionnaire. The participants (n = 171) of the study are residents of Addis Ababa and were selected using convenience sampling technique. The Statistical Package for Social Sciences Software has been employed for data analysis using statistical techniques such as descriptive statistics, t-test, ANOVA, Pearson's correlation and linear hierarchical regression. Bivariate correlation analysis indicated that occupation, belief, convenience, HQ, price and EKAS have statistically significant relationship with CB of respondents. Variance analysis of consumption behavior of BW against the categories of demographic variables (gender, season, age, education, occupation and monthly income) showed no significant variances were retained. Hierarchical regression analysis showed that the factors that predict the consumption behavior of BW are occupational background, price, packaging designs and EKAS with statistical significance of p = 0.05. Despite some limitations in the sampling and data collection processes, the result might provide practical and theoretical experience to the existing knowledge of consumption behavior of bottled water as well as other similar products.

Key Words: Bottled Water, Demographic factors, Psychological Factors, Marketing Factors, Environmental Factors, Consumption Behavior

LIST OF ACRONYM

BW – Bottled Water

CB – Consumption Behavior

CO2 – Carbon Dioxide

EKAS – Environmental Knowledge and Alternative Sources

MoT - Ministry of Trade

ECAE - Ethiopian Conformity Assessment Enterprise

EQSA - Ethiopian Quality and Standards Authority

WHO – World Health Organization

BR - Brand Recognition

MS – Marketing Strategy

PD – Packaging Design

HQ - Health and Quality

EPA - Environmental Protection Agency

FDA - Food and Drug Administration

USA – United States of America

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Chapter One – Introduction

1.1 Background

Water is the most important gift ever nature provided to survival of living things in our planet. Water is life and human beings cannot survive without it. According to Nestlé Waters (2011) on its five years report of its healthy hydration claimed that drinking 1.5 liters per day is a physiological necessity as well as the quality of what we drink has an important role to play in dealing with our health. Researches indicate that consumption of bottled/packaged water is in continuous rise around the world. A worldwide review of bottled water market by Zenith International (2009) indicates significant increase of bottled water consumption with potential upsurge in developing nations around the world particularly in the last two decades. In contrast, many organizations (including United Nations) and activists are campaigning against the manufacturing bottled water due to the high cost added for manufacturing, promotion and disposal of the plastic containers as well as environmental concerns related with pollution and ground water drainage (Arnold & Larsen, 2006).

Similar to the developing nations, in Ethiopia with the changing lifestyle of urban population, the use of treated and bottled water has been increasing exponentially as well as the number of bottled water manufacturing facilities have been on the rise. It was in the early 1990's that Ethiopia first got its own bottled water, when the local Apex Bottling Company introduced the iconic "Highland Spring Water". Any brand of bottled water has in fact continued to be known as simply 'highland' until very recently. Now, after almost two decades of growth, it is not so uncommon to see multiple alternatives in Addis Ababa and in regional cities, bottled from nearby sources. To understand the

factors behind consumers' speedy shift from tap water to bottled water as well as the way customers' motives for preference among many available brands requires empirical inquiry.

According to Yadin (2002), consumer behavior is briefly defined as the behaviors that we observe when people are involved in the purchasing decision-makings, arrangements and habits of buying. Though many complicated factors are involved in understanding the reasons behind the behavior of customers, to the extent that sometimes customers make buying decisions without being aware of their internal drives that make them to purchase products. Studies indicate that understanding the customer buying behaviors involves several complex and intertwined factors such as environmental and marketing factors, situational (physical, time, mood), personal and psychological factors, cultural and social factors …etc. are involved (Tanner & Raynold, 2012).

Despite the rise in the consumption and production of bottled water, studies on the reasons for bottled water consumption seem to vary contextually (Durga, 2010). The factors influencing consumers buying behavior of bottled water in Ethiopia have not been fully understood. Theoretically, Kotler, Armstrong, Wong, & Saunders (2008) argue that consumers' purchases are strongly influenced by cultural, social, personal, and psychological factors. However, water is not a product that we can consume as an alternative but survival is impossible because it is the most vital human needs. Although it is generally understood by consumers of bottle water that the product is better in some or all aspects than tap water, Ferrier (2001) and NRDC (2008) concluded in their study that, this is not always the case. The growth of bottled water consumption may be attributed to negative perceptions of tap water quality regarding its taste and safety. Consumers might drink bottled water because they believe it tastes better than tap water (Ferrier, 2006). However, blind taste tests involving bottled water have not been consistent with this perception

(Falahee & MacRae 1995, Wells 2005, Wilk 2006). In a study performed in Britain by Fahalee and McCrae (1995), subjects preferred water with a higher mineral content. In the study, the bottled water had a higher mineral content than tap water (Falahee & MacRae, 1995). Conversely, in a study conducted in Northern Ireland, subjects were unable to detect the difference in flavor between bottled, distilled and tap water (Wells 2005). In various blind taste tests performed by American media, results have shown that subjects prefer tap water over bottled water (Doria 2006).

Several studies have emphasized several factors which determine the choice for bottled water. Doria (2006) outlined dissatisfaction with tap water and health/risk concerns as the reasons why consumers choose to drink bottled water. In her study about Suriname markets, Durga, (2010) asserted that demographic and psychological factors affect bottled water preference. Therefore, the objective of the current study is to assess the factors behind why customers prefer bottled water to tap water and how they make their choices among the many brands available in Addis Ababa.

1.2 Statement of the Problem

Over the past decade or more, Ethiopians not only changed their life style but their demand for safe drinking water has also significantly increased. Consequently, more industries for bottled water implementation have elevated exponentially and customers today are more aware about the product offerings, they are responding more proactively to their preferences on bottled water brands. According to Kotler, Armstrong, Wong and Saunders (2008), consumption behaviors are strongly influenced by several factors such as by cultural, social, personal and psychological factors and marketers target these factors to persuade customers to commit to the product they offer through several sales campaigns. Despite several bottled water industries and many brands penetrated the market, the state of the brands in the consumers' mind have become the prime

concern of business owners. Consumers' perception and preference among the existing bottled water brands in Ethiopia is not fully understood except few studies focused mainly on the technical aspects of water like microbiological and chemical quality (Mekonnen, Surur, Rajasekhar, & Mohammed-Rafi, 2015), perception on brand equity of few selected products (Alemayehu, 2016), influence of packaging design (Mamo, 2014) and environmental implication of plastic package of bottled water (Ensermu, 2014). Furthermore, Tekle-Haimanot, Melaku, Kloos, Reimann, & Bjorvatn (2006) indicated that consumers of drinking water are also concerned about the chemical content of the water that they consume, for example fluoride. Several factors are examined to find out what can affect people decision on buying bottled drinking water related to the innovation used by the companies. The discussion about the factors that influence consumers' buying decisions of tap and bottled water is still going on. According to Durga (2010), the opinions about bottled water differ and researches show different results. For example, two studies on influence of demographic variables on bottled water consumption behavior reported opposing effects, while in Ghana demographic factors did not show influence (Quansah, Okoe, & Angenu, 2015), whereas a study in Wisconsin, USA did have influence (Eftila, 2009).

Nevertheless, in most cases consumers do choose for bottled water for one or more of the following reasons: personal factors, marketing factors, psychological factors and environmental factors. Consumers have become more health-conscious during last decade and bottled water has the attraction of no calories and no additives. Besides, it is being presented as purer, healthier and more reliable than tap water. In many countries the public water supply is unsafe or of inferior quality and that is the reason that many people do prefer bottled water (Durga, 2010).

Though, the general consumer perception is that bottled water is safer than tap water, but empirical studies were not able to justify this argument. According to Ferrier (2001), bottled water is not necessarily safer than tap water. For example, in USA, tap water and bottled water are regulated by two different agencies: Environmental Protection Agency (EPA), Food and Drug Administration (FDA) respectively. There are currently no regulations regarding recommended shelf life and storage of bottled water, or use of preservatives to prevent microbial growth (Raj, 2005). Furthermore, regulatory practices vary between the EPA and the FDA, in that EPA requires more frequent testing for bacterial growth in tap water than the FDA does for bottled water. The EPA also requires that testing be performed in certified labs by certified researchers, but FDA does not list this as a requirement (Olson, 1999).

When one talks about these bottled waters, the risk to public health is always a source of controversy. Several scientific studies elaborated on the pros and cons of both the chemical composition and packaging (Ferrier, 2001). In Ethiopia, bottled water is among the 57 mandatory standards with its own country-specific indicators of standardization. The law was asserted as early as 2014, when the Ministry of Trade (MoT) gave an ultimatum to the bottlers to get the waters certified by the Ethiopian Conformity Assessment Enterprise (ECAE). Back then, there were only six companies that were said to fulfil the quality standards. Now this figure has climbed to 50. Despite, major preconditions required to earn a certificate of competence, these bodies (FMHACA, ECAE and MoT) there is a lack of integration among these dedicated offices to perform the required tests and still there are uncertified products in the market (The Guardian, 2018). A physiochemical analysis on some brands of bottled mineral water indicated that some brands failed to comply with international guidelines for drinking water with respect to trace metals and some anions and may not be suitable for babies and people suffering from heart or kidney diseases.

Analysis of physical parameters such as pH and electrical conductivity of each water sample were also tested and pH-value of some samples was did not comply with WHO's standards (Seda, Assefa, Chandravanshi & Redi, 2013).

Despite the fact that previous studies have been carried out in this area, the way in which various factors interact to influence consumption preference have yet to be completely understood. Besides that, the possible role of variables such as perception of water chemicals is mostly understudied. Although previous researches in this area have focused on various countries the usage of different research methods makes the task of cross-national comparisons very hard, and it is uncertain how the roles of various factors differ from one country to the other (Cheng, 2015). In addition, even though the bottled water consumption has been growing all around the world, other factors such as convenience, health and environmental awareness are also important. It is also not certain to what degree bottled water is consumed as an alternative to tap water (Doria, 2006; Levallois, Grondin & Gingras 1999).

Doria (2010) indicated that there is limited knowledge about the relationship between certain physiochemical water parameters and cultural, psychological and social factors that affect perception. The roles and importance of factors such as perceived chlorination health benefits, microbiological parameters, radiological contamination, fluoride (whether to oppose or support fluoridation) and other chemicals are hugely understudied Doria, 2010). Therefore, based on the objective of the current study, assessing the factors behind why customers prefer bottled water to tap water and how they make their choices among the many brands available might add to the scarce empirical evidence to the factors of customer preference on bottled water in Ethiopia. Furthermore, as Durga, (2010) claimed that factors behind consumption behaviors of customers

vary from context to context. Consequently, the current might enrich the theoretical and practical gaps that exist in understanding the factors that enhance customer behavior towards consumption of bottled water.

1.3 Objectives of the Study

The general objective of the current study is assessing the factors behind customer consumption behavior of bottled water to tap water and how they make their choices among the many brands available. Accordingly, the specific objectives include:

i.   To determine if demographic factors (i.e. Gender. Age, Education, Occupation, Income and Season) are directly related to the consumption behavior of bottled water customers in Addis Ababa.

ii.   To examine if psychological factors perception and beliefs are directly related to the buying behavior of bottled water and this research also considers psychological factors as one of the most important type of factors which influences the buying behavior.

iii. To determine the influence of awareness of environmental factors (alternative source-tap water) are indirectly related to the consumption behavior of bottled water customers in Addis Ababa.

iv.   To determine the influence of awareness of environmental factors (alternative source-tap water) on preference between bottled water and tap water as well as among common brands in Addis Ababa.

v.   To analyze the impact of marketing factors such as brand recognition, health and quality aspect, convenience, price and marketing strategy on the buying behavior of bottled water customers in Addis Ababa.

1.4 Research Questions

The research questions of this study include:

i.   How do demographic factors affect the consumption behavior of bottled water customers in Addis Ababa?

ii.   How do psychological factors – beliefs and perception affect consumers' purchasing behavior of bottled water in Addis Ababa?

iii.   Does awareness of environmental factors (alternative source-tap water) have influence on preference of consumers between bottled water and tap water as well as among common brands in Addis Ababa?

iv.   Which marketing factors do have influence on behavior of consumers buying of behavior bottled water in Addis Ababa?

To test these research questions in a field survey, hypotheses are developed for the research questions/objectives. The next table shows a summary and list of these hypotheses with the corresponding research question:

Table-1: Research questions and their respective hypotheses

RQ1: How do demographic factors affect the consumption behavior of bottled water customers in Addis Ababa?	**RQ2:** How do psychological factors affect bottled water buying behavior?
H 1.1: There is a relationship between gender and consumption behavior. **H 1.2:** There is a relationship between age and consumption behavior. **H 1.3:** There is a relationship between education and consumption behavior. **H 1.4:** There is a relationship between income and consumption behavior. **1.5:** There is relationship between occupation and buying behavior.	**H 2.1:** There is a relationship between beliefs and buying behavior. **H 2.2:** There is a relationship between perception and buying behavior.
RQ3: Does awareness of environmental factors (alternative source-tap water) have influence on preference of consumers between bottled water and tap water as well as among common brands in Addis Ababa?	**RQ4:** Which marketing factors do have influence on behavior of consumers buying of behavior bottled water in Addis Ababa?
H 3.1: There is an indirect relationship between environmental awareness and bottled water consumption behavior. **H 3.2:** There is an indirect relationship between availability of safe tap water and bottled water consumption behavior.	**H 4.1:** There is a relationship between Brand Recognition and consumption behavior. **H 4.2:** There is a relationship between convenience and consumption behavior. **H 4.3:** There is a relationship quality of BW and consumption behavior. **H 4.4:** There is a relationship between price of BW and consumption behavior. **4.5:** There is relationship between marketing strategy and buying behavior. **H 4.6:** There is a relationship between packaging design and consumption behavior.

1.5 Delimitation of the Study

The major limitation for this research is that it is confined to the city of Addis Ababa. This geographical limitation is not only chosen because of time and access restrictions, but also because of the fact that Addis Ababa is highly populated and it is home of people migrated from almost every region of the country. The city is therefore can provide the good estimation of bottled water consumption and factors that influence preference behavior. Furthermore, this research is only

researching the consumer buying behavior of bottled water, since the consumption pattern from other products may differ. Consumers show unique buying behavior to every single product. For instance, the buying behavior toward milk or alcoholic drinks differs from bottled water.

This research also limits itself to the Surinamese consumer, since it is considered that consumers of different parts of the world behave differently because of cultural factors. Although the bottled water market is global, generalization of the findings of this research beyond residents of Addis Ababa is therefore not recommended. Finally, only selected demographic psychological, marketing and environmental factors are included in this research. Although there are more types of factors which influence the consumer buying behavior, only specific factors are will be investigated by this research. This as a result of time and administration restrictions. Hence, not all possible results are explored by this study.

1.6 Operational Definition of Terms

Bottled water refers to water that is stored in plastic bottles that are food-grade, meant for the consumption of humans, which in Ethiopia traditionally known as "Highland."

Demographic factors are personal attributes used to examine individuals such as gender, age, level of education, occupation and income.

Psychological Factors are personal beliefs someone has about bottled water, determines his/her attitude toward bottled water and one is inclined to consume bottled water, which he/she perceives to be good and is not inclined to use something which he/she perceives not to be good.

Environmental Factors psychological awareness that are achieved through the assessment of natural environment with a certain level of favor or disfavor consumption of bottled water.

Marketing Factors are marketing tools utilized by bottled water manufacturing firms to induce their products to customers. These factors include: brand recognition, convenience, marketing strategy, health and quality, packaging design…etc.

Chapter Two – Review of literature

2.1 Overview

Currently 26 to 60 brands of bottled water have now entered the market up until 2013, the number had reached 53, and if the same progression continues it will continue to grow by 13% annually, reaching around 90 by 2020. The number of consumers too has escalated over the years; to a point where some have stopped drinking tap water altogether. Presently, there are more than fifty-seven mineral and bottled water producers, majority of them passed through a thorough certification process mandated by the Ethiopian Quality and Standards Authority (EQSA) and the Ethiopian Conformity Assessment Enterprise (ECAE), (Fortune newspaper, 2016).

In order to understand the rise in customers' consumption of bottled water along with rise of bottled water industries in Ethiopia, it is important to assess the four major factors: Demographic, Marketing, Psychological and Geographical factors. *Demographic factors* are sub-elements that consists of gender, age, education, occupation, income and so on. While, the *marketing factors* are variables that contain brand recognition, health and quality aspect, convenience, price and marketing strategy that marketers use in targeting consumers. Psychological factors are related consumers' perception and preference about bottled water. And finally, geographical factors are more associated with availability of alternative source of water for consumption. Therefore, the review of literature sections comprises of three major parts: theoretical review on the customers' consumption behavior of bottled water, empirical evidence on the factors that influence customer preference and conceptual framework of the current study.

2.2 Theoretical Review

2.2.1   Behavior of Consumption

Understanding consumer behavior and "knowing customers" is not simple. Customers may say one thing but do another. They can get influenced and change their mind the last minute. Or their needs or wants change from time to time. Consumer buying behavior refers to the buying behavior of final consumers- individuals and households who buy goods and services for personal consumption (Kotler et al., 2008). The starting point for understanding buyer is the stimulus response model. Marketing and environmental stimuli enter the buyer's consciousness. The buyer's characteristics and decision process lead to certain purchase decisions. The marketers taste is to understand what happens in the buyer's consciousness between the arrival of outside stimuli and buyer's purchase decision. A consumer's buying behavior is influenced by cultural, social, personal, psychological, marketing and environmental factors to (Kotler, Armstrong, Wong and Saunders (2008).

2.2.1.1 Consumer decision process

Consumer decision identifies at least two types of decision making. 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 and it involves intuitive, automatic, associative, and fast decisions (Haugteued, Herr & Kerdes, 2008).

According to Kotler *et al.* (2008), consumers pass through several stages before purchasing something. They argue that the buying process is one which starts long before the actual purchase and continues long after. The marketer therefore needs to focus on the entire buying process, rather than just the purchase decision. Figure-1 shows the consumer decision process with influencing factors. The process starts when the buyer recognizes a problem or *need*. Thereafter the buyer will or will not *search for* more *information* related to the need. This information will be used to *evaluate alternative brands* in the choice set. After evaluation, the buyer actually *buys the product*.

Personal	Psychological	Social	Cultural
Age & life-cycle stage Occupation Economic situation Lifestyle Personality and self-concept	Motivation Perception Learning Beliefs & attitudes	Reference groups Family Roles and status	Culture Subculture Social class

Customer buying decision process Consumer buying decision process

| Need recognition | → | Information search | → | Evaluation of alternatives | → | Purchase decision | → | Post purchase behavior |

Figure-1: Consumer buying decision process versus factors (*Source*: Kotler et al., 2008).

Based on the satisfaction or dissatisfaction of the buyer, he/she will take *further actions after the purchase* (Kotler et al., 2008). Kotler *et al.* (2008) agree that the next factors strongly influence the buying behavior of consumers: cultural, social, personal and psychological factors. The consumer's choice therefore results from the complex interplay of all these factors. Although the marketer cannot influence many of these factors, they can be useful in categorizing potential customers to serve their needs better. Kotler *et al.* (2008) agree that the next factors strongly

influence the buying behavior of consumers: cultural, social, personal and psychological factors. The consumer's choice therefore results from the complex interplay of all these factors. Although the marketer cannot influence many of these factors, they can be useful in categorizing potential customers to serve their needs better.

Marketing factors from promotion to packaging; effective marketing has increased the demand for bottled water. As a real business, bottled water brands are sharply competing against each other by, amongst others, competitive prices and aggressive promotion. For many people, bottled water is just a convenient beverage, especially when they are on the go. It is easy to carry and almost everywhere available. It can be concluded that part of these driving factors are strongly psychologically determined. Since there are no explicit results yet about the nature of bottled and tap water, it seems to be in the mind of people that bottled water is better than tap water. As seen in the previous section, psychological factors are one group of factors which generally influence the consumer buying behavior (Doria, 2006).

Many products use packaging to create a distinctive brand image and identity (Belch & Belch, 2003). 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.

This research focuses on two psychological factors which influence consumers: *beliefs* and *perception.* Furthermore, this research looks into the possible relationships between demographic factors (personal factors) and consumers' buying behavior of bottled water. As per Kotler *et al.* (2008), a *belief* is a descriptive thought that someone holds about something. These, in turn, influence the buying behavior. *Perception* is the process by which people select, organize and interpret information to form a meaningful picture of the world (Durga, 2010). The concept of this research argues that there may be a relationship between these factors and the consumers buying behavior of bottled water.

2.3 Empirical Evidence on Factors behind Bottled Water Consumption

In this subsection of empirical evidence, trend of bottled drinking water consumption and the four major factors that influence the consumers bottled water consumption behavior are reviewed according to their respective order. However, the factors might not be distinctively reviewed according each factor's order unilaterally due to that the factor elements addressed in the empirical studies vary from one to the other. Particularly, psychological factors reveal in mixture with the rest of other factors.

2.3.1   Bottled Water Consumption Trends

Despite scarce availability and contextual variations in empirical reports, it is important to review the available empirical studies in relation with the factors that affect the consumption of bottled water. Several studies indicate that consumption of bottled water is rising nonetheless its harmful implication to the environment, many consumers drink bottled water instead of tap water Gleick, Wolff, Chalecki & Reyes, 2002). According to Data-Monitor (2006), in 2006, total US bottled

water consumption reached 31.2 billion liters (104 liters per person), a 9% increase from 2005 and by 2010, market volume for bottled water is projected to reach is 38.6 billion liters (Data-Monitor, 2006). Consumers choose to drink bottled water for a variety of reasons including brand recognition, portability and health (Wilk 2006). Studies have shown that increased consumption of bottled water is related to a negative consumer perception of tap water quality (Ferrier, 2001, Doria, 2006). Whereas, other studies have shown that bottled water consumption is related to demographic factors such as race, income or gender and the likes (Doria 2006). For example, a study on African American, Asian and Hispanic groups showed the highest consumption of bottled water, even though on average these groups have a lower income than whites. The results were hypothesized to correlate to the differences in water system quality between rural, suburban and urban areas (Doria, 2006). Foote's (2011) study examining reasons for bottled water consumption in Florida indicated that majority of respondents of this study regularly drank bottled water regardless of income. Convenience was the most popular reason cited for drinking bottled water, and taste also emerged as an important property. Respondents did not consider themselves to be influenced by advertising and marketing by bottled water companies. Concerns regarding tap water were related to the safety and taste of water supply. Participants were to some extent aware of the environmental implications of drinking bottled water, yet this knowledge did not keep them from drinking bottled water (Foote, 2011).

2.3.2 Demographic Factors (Gender: Age, Education, Occupation, Income & Season)

Kotler (2008) conducted a study on influencing factors of the consumer buying decision process and concluded that both demographic and psychological factors are related to the buying behavior of bottled water to some extent. A study conducted on factors that affect purchasing behavior of

consumers in Ghana showed that relationship has been detected between demographic variables (such as age categories, income groups, educational levels) and bottled water buying behavior (Quansah, Okoe, & Angenu, 2015). Empirical study to examine the effects of information sources and risk perceptions on individuals' willingness to pay for improved water quality and infrastructure confirmed the expectations that as individuals become more risk averse, their willingness to reduce the risk increases. Besides education, demographic characteristics and family circumstances are not significant determinants of individual's willingness to pay for water quality improvements (Eftila, 2009).

A study on consumers and their perceptions of water quality in the United States, have shown that gender and education affect environmental risk perceptions thus shaping choices regarding water consumption. In a national survey with over 5,000 respondents that asked about regional water quality, environmental attitudes, bottled water consumption and demographics, this study found that younger respondents and females were most likely to be the most frequent consumers of bottled water. They explained this in terms of younger people paying more attention to marketing and advertising and women being more aware of health risks. This study also found that environmental perceptions were not reflected in decisions to consume or refrain from bottled water. The extent to whether these findings are place-specific or can be generalized to the wider U.S. population, further empirical examination that investigate how bottled water consumption is related to attitudes towards the environment and knowledge of environmental impacts is required (Morton, & Mahler, 2011).

2.3.3   Environmental Factors (Alternative water Sources)

Although the bottled water industry growth marks success, the life cycle of water bottled in disposable plastic negatively affects the environment (Glitz & Franklin, 2007). As Andey, and Kelkar (2009) indicated that the regularity and duration of supply interruptions influences the total amount of water consumed by consumers, when the intermittent supply is insufficient for allowing consumers to fully meet their water demands and they purchase more bottled water. However, intermittent water supply has little impact on consumption levels of bottled water where most water demands are met during supply periods.

Pintar Waltner-Toews, Charron, Pollari and Fazil, (2009) claimed, in many instances, the consumption of bottled water is higher in communities where the alternative water sources (i.e. tap water) is of poor quality. The consumption of bottled water has progressively grown over the last decade; this was significantly influenced by the perception that the public of the tap water quality (Pintar et al., 2009). For example, Dada (2009) made a study on successful regulation of bottled water reveals that the importance of locally sourced, low-cost alternative drinking water schemes in contributing to increased sustainable access in developing nations cannot be over-emphasized. One of such initiatives in Nigeria, where public drinking water supply is endemic is packaged drinking water sold in sachets. Packaged water if improved upon has been suggested as alternative water provisions that could allow contributions from local initiatives in the drive towards achieving the water target of the Millennium Development Goals. This form of drinking water is easy to get and the price is affordable but people still worry about its purity. Successful regulation of the packaged water industry remains a challenge to the national agency established to enforce compliance with international standards (Dada, 2009).

In contrast, in Ontario, Pintar et al. (2009) empirical study reported that amongst the drinking water consumers, 51% consumed tap water exclusively, 34% consumed bottled water exclusively and 14.5% of consumers drank both tap water and bottled water. In a day, the mean volume of drinking water (tap water and bottled water) consumed was 1.39 liters. The authors concluded that making people aware of the environmental and economic costs of bottled water is not sufficient to regaining tap water trustworthiness. Instead, the habits of consumerism which make it convenient to purchase bottled water seem to be implicated in the popularity of bottled water (Pintar et al., 2009). Similarly, Chen, Zhang, Ma, Liu and Zheng (2012) conducted analysis of the drinking water consumption pattern for a decade in Shanghai, China from 2001 until 2011, shows that the tap water consumption percentage has continued to be stable and is the preferred choice of consumers, with 58.99 percent in 2001 and 58.25 percent in the year 2011. Consumption of bottled water on the other hand has decreased from 36.86% in 2001 to only 25.75% in the year 2011. The relationship between perceived quality and consumption behavior is verified as majority of respondents (52.50%) believed that tap water is the cleanest and safest water, whereas only 22.50% viewed bottled water and barrel water to be the cleanest and safest. This proves that the better the perception of drinking water quality, the higher the consumption of that particular drinking water (Chen et al., 2012).

Although its growth marks success for the bottled water industry, the life cycle of water bottled in disposable plastic negatively affects the environment. The environmental impact of bottled water consumption stems from manufacturing, transportation, distribution and disposal of plastic water bottles (Glitz & Franklin, 2007). Each step of the bottled water production process produces greenhouse gases: the transportation of raw materials, the production of PET plastic water bottles, the filling of water bottles, and the transportation of the finished product (Ferrier, 2001). According

to the California Department of Conservation, in 2006 only 50% of PET sales were recycled. Plastic bottles that are not recycled end up in landfills and are incinerated along with the trash. This process further increases the amount of greenhouse gas and toxic fume emissions (Molinaro, 2003). Also, potential resources created from recycled materials are not utilized, and virgin materials must be extracted for processing (Glitz & Franklin, 2007).

According to Glennon (2002), water bottling factories do have influence on the local streams and groundwater aquifers. Extracting too much water may use up the groundwater reserves and lessen the flow of lakes and streams, thus resulting in environmental stress. Even though 75% of bottled water in the world is manufactured and distributed regionally, the transportation and trade of the remaining 25 percent of bottled water causes concern for carbon dioxide emission and pollution (Ferrier, 2001). Furthermore, Sierra Club (2008) made a study in their informational packet about bottled water, the Sierra Club mentions water shortages that have been reported near bottling plants in Texas and the Great Lakes region: the withdrawal of large quantities of water from springs and aquifers for bottling has depleted household wells in rural areas, damaged wetlands, and degraded lakes.

Since the public is not well informed about the environmental problems associated with bottled water, Parag and Roberts (2009) believe that information alone could have a serious impact on consumption. Respondents were asked how long they keep the bottles (duration) at their premises. It was fairly acceptable that the higher number of people (21%) used those water bottles and kept it only for a week. The production and distribution of drinking water is also harmful to the environment. When plastic bottles are not recycled, they contribute to landfill overload (Glennon, 2002). The majority of bottled water's bottles are manufactured using PET (polyethylene

terephthalate) that mostly cannot be recycled and resulting in most of the waste ending up in landfills (Olson, 1999). Approximately 70% of the plastic water bottles are not recycled by the consumers and have ended up in landfills as plastic waste (Government Accountability Office, 2010). Some bottles may end up on in rivers and oceans, or on land as litter. Bottled water production is very inefficient, as a substantial amount of water is wasted in this process (Pacific Institute, 2006). In 2011, more than 2.5 million tons of carbon dioxide (CO_2) was used to produce bottled water for the consumption of the US consumers, as this energy is required for refrigeration, packaging and transportation (Gleick & Cooley, 2009). Hence, the production and consumption of bottled water do not only waste resources that are valuable, they also have a major and damaging effect on the natural environment and even lead to climate change (Linden, 2013).

2.3.4 Marketing Factors

Marketing Factors are matters that include *brand recognition, health and quality aspects, convenience, price and marketing strategies* utilized by manufacturers or marketers. An empirical research by Quansah et al. (2015) found relationships among perception, beliefs and bottled water usage. The study also showed that quality, brand price, availability and package were found to influence consumers' choice of bottled water (Quansah et al., 2015). A survey study conducted by a grocery supplier company known as Nielsen Company (2015) on reasons why consumers switch stores claimed that money makes the world go round so it's no surprise that price is the top driver of store switching behavior by a wide margin. The participants' response for reasons of store switching are 68% say price, followed by quality (55%), convenience (46%) globally, special sales promotions techniques (45%) are drivers for nearly half of respondents, while cleanliness (39%), and selection/assortment (36%) are reasons for four-in-10 customers. However, Maria (2000) in

her study on the market scope of mineral water has revealed that the consumer preference of mineral water was different from individual to individual. While businessmen go for higher price brand with good quality, the common man goes for minimum price with good quality with less consideration of brand.

Gauraj (1996) has reflected that there are three routes to raise the market share in the current market. The first measure is increasing the demand of existing customers by aggressive advertising and attractive competitive consumers. The second measure is stimulating interest of potential buyers and going in for additional channels in current market. The last step is the product development which included providing water in different variants to suit the likes of the customers. Sasirega and Reddy, (1999), in their work institutional consumer perception of packaged drinking water, have observed that nearly 37% of the respondents used packaged drinking water for health purposes, 16.43% for its hygienic conditions, 6.43% for its ease to use, 20.71 % due to employer's demand and 5.71 % due to presence of salt in domestic water. The study also unfolded that all the respondents were choosing good brand of packaged drinking water due to better quality in delivery, majority of the respondents considered quality, availability and price as the important factor while purchasing the jars of packaged drinking water and 92.14% of the respondents never shifted to other brands while others choosing a renowned brand. Yasar (2011), in his study on Pakistani women's perception of the quality of drinking water and its impact on health, the results showed the values of bacteriological parameter fecal coliform were above WHO guidelines which made water unfit for drinking purposes. The community was unaware of the quality of water they were drinking. Women with higher education had perception of smell (F = 3.51, p<0.01), taste (F = 3.10, p<0.05) and turbidity in water (F = 5.34, p<0.01). A study on consumer behavior towards soft drinks has revealed that 76.35% of the consumer bought soft drinks, only because they were

satisfied with the quality only and a small portion (i.e. 2.65%) of the consumers bought them because of cheaper price. Besides, 51.72% of the consumers changed their brands occasionally and 48.28% changed their preferences frequently (Murugesan, 1990).

Of the dimensions of the marketing factors, brand recognition and packaging are the major factors that influence customer consumption behavior in highly competitive market. Veidung's (2007) empirical study on the influence of bottled water's design, source and brand on perceived quality and purchase intention in European market showed that there is a positive relationship between the visual attractiveness of a bottle and that of the perceived quality as well as intended purchase. The results also illustrate that a global trend prevails in determining the attractiveness of the bottles. Hence, there is seemingly no need for local adaptation of the water bottle's design. In addition, her study showed that the country of origin information does not have statistically significant strength to positively influence perceived quality or purchase intention for a visually unattractive rated bottle. While, the impact of brand information illustrated that a brand with significant international exposure and recognition can influence the consumers' perception of quality and purchase intentions (Veidung, 2007). A research conducted by Deliya and Parmar (2012) and their research has proven that packaging influences people in buying the products bottled water.

An Empirical study by Mozo (2015) on the influence of packaging design on consumption behavior of bottled water showed that the significant features of packaging design were determined. The significant features that influenced consumption behavior of bottled water were: shape, thickness, texture, clear panel, easy to handle, easy to open, reusable, portable, label's graphic, label's color, label's font, and label's information. The target specifications were good aesthetics, thick and smooth bottle, easy to handle, easy to open, reusable, portable, and good

labeling design with a nature scenery graphic and a blue one, and good label's information. Those specifications were made as new design for the packaging of bottled water. Evaluating the new design of bottled water, the results showed positive result which means it is accepted by the consumers and in market (Mozo, 2015). A Study of Jeya (2007) on consumer attitude towards branded mineral water concludes that water is a main part of human being's daily life. The consumers have their choices towards the mineral water brand names. Mineral water plays an important role in designing the attitude of the consumers. Different attributes of the mineral water influence the purchase decision of consumers. Buyer behavior is the psychological, social and physiological behavior of potential consumer as they are able to evaluate, purchase consume and tell other people about the products and services. It is that act of considering different facts of benefits expected from the product before affecting the purchase of the product (Jeya, 2007).

Furthermore, Deepak, Prasanna, and Srilakshmi (2002) found out the effect of advertisement on the sales of brands and consumers' preference towards the brand, its image both by itself and in the competitive context. The study identified the extent to which consumers prefer "Bisleri" as compared to two other brands: "Kinley" and "Aquafuna" (Deepak, Prasanna, & Srilakshmi 2002).

2.3.5 *Psychological Factors*

Though, psychological factors comprise of several dimensions, the current study focuses on two psychological factors which influence consumers: beliefs and perception. A study on consumer perceptions and experiences of drinking water quality in Scotland revealed consumer perceptions of quality are based mainly upon subjective experience of water clarity, taste and odor. However, consumers will also consider incidents such as contamination or environmental pollution in shaping their opinions about water quality. McKissock and Morgan, (2007) research suggests that

consumers associate the appearance, taste and odor of drinking water as a direct indication of its purity (good quality). And tap water which is cloudy or discolored is deemed to be unclean. Similarly tap water which has a recognizable odor or taste is deemed to contain chemicals and thus be 'impure'. Consequently, some consumers believed that bottled water was of better quality than tap water because it was deemed to be clear, tasteless and odorless. Through, the process of mapping water quality testing results and consumer complaints it was possible to identify geographic clustering of complaints and water quality failures. This information was used in the development of a sampling approach for the subsequent stages of primary research, and also allowed analysis of customer perceptions by area with respect to chlorination of water supply, mean chlorine level and water quality failures (McKissock & Morgan, 2007). Besides, Rodwan (2009) challenges that bottled water is described as "pure" and "natural" and portrayed with mountains and rivers and claims that these descriptors and images provide no guaranteed indication of the geographic source of the water. In fact, the EPA states that a majority of bottled water is actually from a ground water source. Most bottlers use ozone to disinfect their water. Although it is more expensive than other treatment methods, it does not leave an undesirable taste. Disinfection methods for tap water include chlorine, chloramine, ultra-violet light and ozone. Chlorine and chloramine are used because it is both inexpensive and efficient. Unfortunately, the taste of chlorine is a common complaint regarding tap water taste, so that even where tap water may be safely potable, many people prefer bottled water, which they regard as superior in taste (Rodwan, 2009).

Ahmad's (2010) study reveals that overtime per capita water availability in the world as well as in Pakistan has been declining. This study was undertaken to analyze the magnitude of awareness, perception, practices, and demand for safe drinking water. The study further elaborated households

Willingness to Pay (WTP) for improved water quality and services in Peshawar, Pakistan. Schooling, exposure to mass media, household income and occurrence of diarrheal diseases were used to measure the households' response towards the health risks associated with contaminated water. Moreover, to find out public acceptability to government and private sector as service providers, households were asked two separate questions regarding their maximum willingness to pay for an improved water system by either one. Out of the sample households, 78.4% were willing to accept improved water system provided by government while relatively less households (55.6%) were willing to pay in the case of private company as the service provider. It is worth mentioning that according to the sample about 76% households were not using any method for water purification at their homes in district Peshawar. This study empirically proved that the role of awareness besides the income constraint is the key determinant of demand for safe drinking water. Another study also found relationships among perception, beliefs and bottled water usage (Quansah et al., 2015).

Silva, Udugama and Jayasinghe-Mudalige (2012) in an empirical analysis based on urban households (n=300), examined empirically the urban consumer perceptions on key food quality attributes, including price, food safety, labeling and packaging for four liquid food products, namely bottled water, pasteurized milk, ready-to-drink fruit juices and carbonated drinks. Based on the multidimensional nature of issue, they use multivariate data analysis techniques and the outcome of analysis revealed that, irrespective of the product, price plays the most significant role on consumer decision making process followed by food safety. Nevertheless, consumers were judged differently on these quality attributes as they decide on purchasing different product combinations and this behavior is correlated with the socio-economic status of a consumer. The results imply that manufacturers of these products shall pay attention to the food quality attributes

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in concern in their attempt to cater into their client-base and penetrate into new food markets (Silva,

Udugama & Jayasinghe-Mudalige, 2012).

2.4 Conceptual Framework and Hypotheses

A conceptual frame work of this study is constructed (Figure-1) and the relationships between

independent and dependent variables are assumed positive based on the studies conducted by

Durga (2010). Demographic,Marketing, Psychological and environmental factors are considered

as independent variables whereas, behavior of consumption is dependent variable.
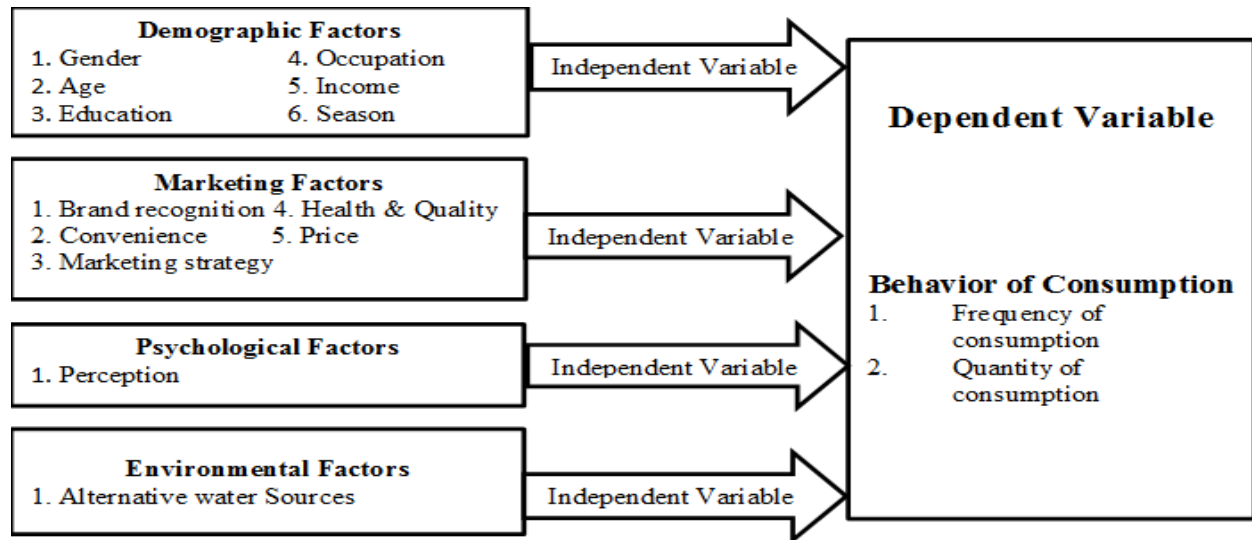
Figure-2: Conceptual framework of the study (Source: Durga, 2010).

Chapter Three - Methodology

3.1 Research Design

The current study is quantitative research approach that enables to understand empirically the factors that affect consumption behaviour of BW in Addis Ababa. Marczyk, Dematteo, and Frestinger (2005) claim that empirical research involving human participants is most commonly utilized in the social and behavioural sciences. Mainly, the objective of this research is to assess the factors that affect preference of customers' in consuming bottled water or consumer purchase decision. The research design is descriptive and correlational. The reason why the descriptive type of research chosen is to examine and clearly describe the factors that consumers base on choosing bottled water and correlational in order to understand the relationship between the factors on consumers' purchase decision and consumption behaviour of consumers.

3.2 Sampling Design

3.2.1 Sampling Techniques

The sampling technique used in this research is convenience method of sampling. According to Schofield (2006), convenient sampling is a technique of sampling which enables to collect data according to the availability and willingness of participants in the population, but with sufficient number of participants to imply representativeness. Teddlie and Yu (2007) argued that convenient sampling a technique that has two broad characteristics that is, sampling used to achieve representative and comparative data in dimension of interest. This indicates that the participants of the research will be mainly individual consumers and the units of analysis for this research are individuals.

3.2.2   Sample Size

The target population of this research consists individual consumers drinking bottled water in Addis Ababa. Due to the sample frame of the population in the current study is unknown, the sample size is determined using the general formula recommended for unknown population size. The sample size was calculated from Eq. (1), which gives the minimum number of survey forms that are required for a given confidence level with a normal distribution response of a large population size (Roses, Prassas, & McShane, 2004).

$$N= z^2 s^2 /e^2$$ ……………………... (Eq.1)

Where, N is the minimum sample size; z is the z-value of a given confidence level (for 95% confidence level it is 1.96); s is the coefficient of variation (assumed as 0.5) and e is the tolerance level (assumed as 5%). Based on Eq. 1, the minimum sample size was found to be 384. However, though the researcher distributed 400 questionnaires in many cafeterias and supermarkets, the response rate has been only 52.1 % (n = 200) of the minimum sample size. Furthermore, 29 questionnaires have been discarded due to lack of required information were missed. Therefore, the number of respondents included in the current study are 171 residents of Addis Ababa.

3.3 Data Collection Procedures

The places of data collection for this research were different cafeterias and supermarkets in Addis Ababa. Prior distribution of questionnaire, the researcher contacted the responsible personnel (owners or managers) in these cafeterias and supermarkets. Then after, the questionnaires were distributed to these places in order to collect data from respondents. Data has been collected from bottled water consumers upon free will and without compensation to participate.

3.3.1 Population Inclusion Criteria

The population of this study are bottled water consumers in Addis Ababa. The participants of the study were individuals with age equal or more 18 years because according to the Ethiopian law an individual is considered as adult in this age range and this avoids additional effort of seeking parental permission, if underage are to participate. Both male and female respondents with almost equivalent proportion have provided data.

3.4 Data Collection Source and Tools

The study has employed ccross-sectional survey method of data collection using self-report questionnaire. The independent and dependent variables were measured at the same point. The source of data in this study is primary data. A semi-structured and self-administered questionnaire has been distributed to bottled water customers in Addis Ababa.

3.4.1 Self-administered Questionnaire

Self-completion questionnaires are commonly method of data collection but many investigators doubt this method because they suffer from low and uncertain response rates. However, they are widely used where there is a strong relationship with the respondents and the researcher, a self-report questionnaire is appropriate and get high response rate. It also minimizes the efforts and numbers of interviewers are best suited for surveys with lots of rating scale but they do not allow controlled questioning (Hague, 1988). In using a questionnaire, as research tool, the two options we have to follow are either to adapt from previously available instruments or need to develop a new one depending on the resources, time and purpose of the study (Creswell, 2014). The current self-report Questionnaire has five major parts that includes: (1) demographic information (gender,

age, educational background, occupation and monthly income of participants); (2) items that measure psychological factors (perception and belief) on customer consumption behaviour and (3) items for measuring marketing factors on customer consumption behaviour (4) items that measure environmental factors consumption behaviour and (5) consumption behaviour of customer.

3.4 Reliability and Validity of Research Questionnaire

Reliability is a measure for the consistency of collected data through time and validity refers to whether the items measure what they are supposed to measure. A pilot data collection will be taken by distributing the 40 questionnaires. So that, the validity and reliability checks of the instrument has been conducted accordingly. In order to test the reliability of this questionnaire, after collecting a pilot data, statistical test of reliability test has been tested to identify and eliminate possible problems. Regarding the validity of the questionnaire, revision takes place on the basis of the feedback from pilot respondents.

3.4.1   Pilot Data Analysis

To check the reliability of the instruments used in this study the researcher has conducted a pilot study at Commerce Business School, Addis Ababa. To address the validity and reliability, clarity of instructions, items and language simplicity were checked from the response of 25 participants. Content validity of the questionnaires were examined by two experts from Addis Ababa University. Accuracy of the wording was also reviewed by one language expert and experienced cultural liaison. Having comments from those experts some changes were made on words. The result of internal consistency, reliability of the questionnaires items was assessed by Cronbach alpha. Reliability test demonstrated Cronbach alpha with minimum value of 0.69 for Price and

0.89 for Perception and the total internal consistency of all questionnaire items (n=68) was 0.94 as displayed in Table-2.

Table-2: Reliability of questionnaire items

Variable	Cronbach's Alpha	N of Items
Perception	0.89	10
Belief	0.74	8
BR	0.77	5
Convenience	0.86	4
Marketing Strategy	0.88	6
Health and Quality	0.82	7
Price	0.69	5
Packaging Design	0.87	6
Environment & Alternate Source	0.82	7
Consumption Behavior	0.79	10
Total Reliability of Items	0.94	68

3.5 Research Ethical Issues

In this study, the researcher has addressed different ethical issues. An Informed Consent Form (refer Appendix-3), which explains the purpose of the study, request for cooperation, absence of any remuneration for participating, confidentiality of the identity of participants., the information they supply and their freedom to withdraw from participation. Therefore, the informed consent form was provided to every cafeteria and supermarket during the questionnaire distributions. In addition, confidentiality of the data provided and anonymity of respondents has been secured by providing successive numerical codes (1, 2, 3…etc.).

3.6 Method and Procedure of Data Analysis

Analysis of the data collected in this research was conducted quantitative statistical methods. The data gathered using the self-administered questionnaire with the demographic data of participants, scales and checklist response of participants reported as subjective perception of respondents has been analyzed using Statistical Package for Social Sciences (SPSS Version 23, 2015). Descriptive analysis of participants such as the mean, SD and range were used on demographic characteristics of participants, scale properties…etc. The relationship between the independent variables (factors that influence customers' consumption behavior) and the consumption behaviors (preference, frequency and quantity of consumption) were analyzed using correlation and multiple linear regression methods. Furthermore, demographic influence of on consumption preference of consumers were analyzed using independent t-test and ANOVA statistical methods.

Basically, the current study is an empirical research which states some hypothesis for the purpose of answering the main problem. Prior to conducting statistical analysis, conditions of basic assumptions of each statistical techniques must be fulfilled. Accordingly, test of homogeneity has been utilized to address the assumption of t-test and ANOVA using Levene's test for equality of variances. For example, in Table-3, the significance value of the statistic is F =1.145, p = 0.286.

Table-3: Independent Samples Test between gender and consumption behavior

Levene's Test Equality of Variances			t-test for Equality of Means					95% CID	
F		*p*	*t*	*df*	*p*	*MD*	*SED*	Lower	Upper
1.15		0.29	0.64	168.00	0.53	0.60	0.95	-1.28	2.49
Group Statistics									
	Gender	N	Mean		Std. Deviation		Std. Error Mean		
CBTot	Male	89	29.75		6.39		0.68		
	Female	81	29.15		5.99		0.67		

Because this value is greater than 0.10, it is assumed that the groups have equal variances and this confirms that the data of gender and consumption behavior of respondents fulfill test of equality of variance. Similarly, in One-way ANOVA tests between categories of demographic variables and consumption behavior their variance equality has been checked for homogeneity tests using Levene's test for equality of variances. An example of homogeneity test displayed in Table-4 shows that the significance coefficient value $p = 0.154$ provides that the data of the two variables (age & CB) are homogenous and it is a condition to proceed conducting the One-way ANOVA test.

Table-4: Test of Homogeneity of Variances

	Levene Statistic	df1	df2	p
CBTot	1.586	6	164	.154

Descriptive

		N	Mean	SD	SE	95% C I of Mean Lower	95% C I of Mean Upper	Min	Max
CBTot	18 - 23 year	8	30.75	5.09	1.80	26.49	35.01	25.00	38.00
	24 -29 years	73	29.37	5.86	0.69	28.00	30.74	14.00	44.00
	30 - 35 years	73	29.68	6.68	0.78	28.13	31.24	16.00	46.00
	36-41 years	9	29.78	6.83	2.28	24.53	35.03	19.00	41.00
	42 - 47 years	3	23.33	4.04	2.33	13.29	33.37	21.00	28.00
	48 - 53 years	2	24.50	0.71	0.50	18.15	30.85	24.00	25.00
	54 - 59 years	3	31.67	3.06	1.76	24.08	39.26	29.00	35.00
	Total	171	29.47	6.18	0.47	28.54	30.40	14.00	46.00

Prior to conducting any multiple linear regression analysis, certain basic assumptions of multiple linear regressions have been checked. These basic assumptions include measurement level of variables (our variables needed be either ratio or interval data), linear relationship between the two variables, no significant outliers, independence of observations, non-multicolliniarity, homoscedasticity and approximately normal distribution of the graph of residuals (errors) of the regression.

In order to check the assumptions, all independent variables (Demographic, Psychological, Marketing and Environmental awareness) have been entered as one block in the regression and CB as dependent variable. The outputs of the analysis have been checked for fulfillment of preconditions of the multiple linear regressions. Homoscedasticity is that regression standardized residuals do not vary systematically with the predicted values by plotting the residuals against the values predicted by the regression mode as indicated in Figure-2 below, the scatter plot between residuals and CB varies randomly, not systematically.
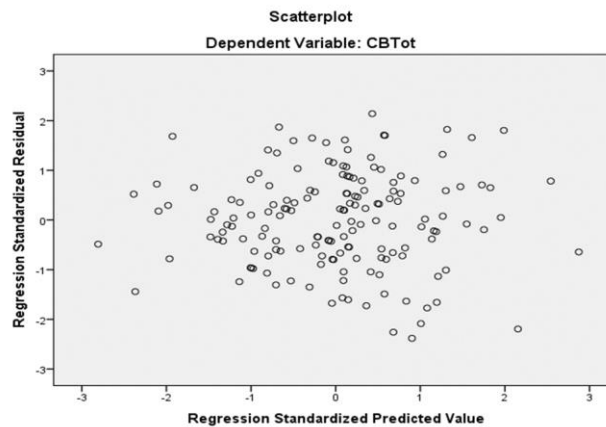
Figure 2: Scatter Plot of randomness of regression standardized residuals vs. predicted value (CB)

Normality – the residuals should be normally distributed as demonstrated in the second part of Figure-3, whereas, linearity – the residuals should have a straight-line relationship with predicted DV scores -CB in our case as illustrated Figure-3 below. Besides, these set of assumptions can be examined to a fairly satisfactory extent simply by plotting scatterplots of the relationship between each explanatory variable and the outcome variable.
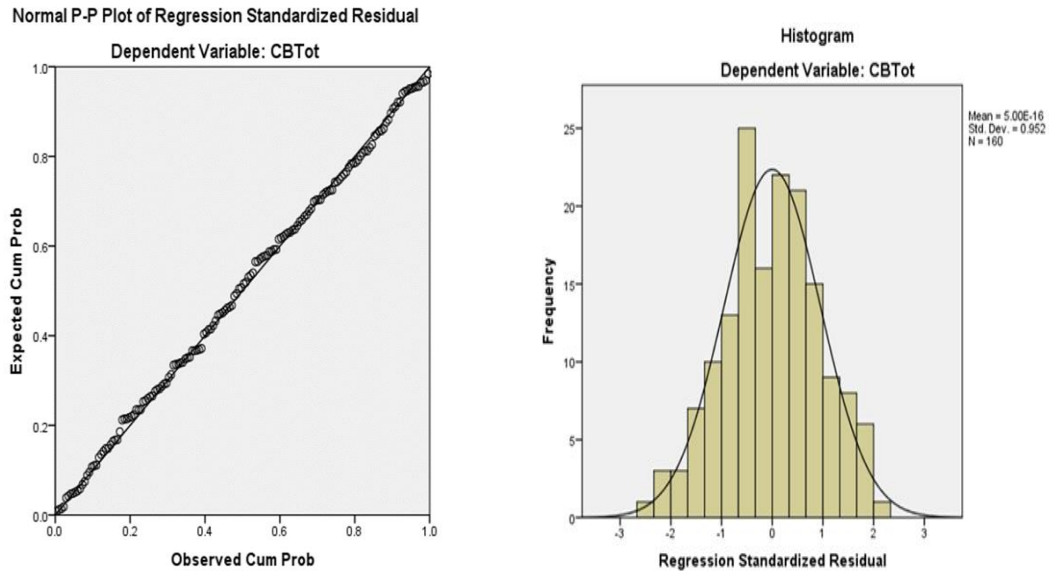
Figure 3: Linearity (P-P Plot) and Normality graphs of Regression Standardized Residuals with CB of respondents

Multiple linear regression analysis are expected mainly to conduct Collinearity diagnostics, which enables to detect inflated linear relationship that give two values—Tolerance and VIF (variance inflation factor) and both are related to each other in the way that tolerance is just the reciprocal of VIF. Tolerance, which is simply 1 minus that R^2, very low values of tolerance (0.1 or less) indicate a problem. Very high values of VIF (10 or more, although some would say 5 or even 4) indicate a problem. According to Gaur and Gaur (2009), once multicollinearity is detected in the model, the regression coefficients are likely to be meaningless and removal of some predictor variables or standardizing the predictor variables. A value of VIF higher than four (or Tolerance less than 0.2) indicates the presence of multicollinearity. Similarly, the eigenvalues that are close to 0, indicating that the predictors are highly inter correlated and that small changes in the data values may lead to large changes in the estimates of the coefficients. The condition indices are computed as the square roots of the ratios of the largest eigenvalue to each successive eigenvalue. Values greater than 15

indicate a possible problem with collinearity; greater than 30, a serious problem (Gaur & Gaur, 2009). Therefore, in the current data, due to some values had multicollinearity problems, all the predictor variables were transformed into Z-score. As a result, the test results of collinearity values are within the accepted ranges (refer Table-5). Another simplest way to ascertain whether or not our explanatory variables are highly correlated with each other is to examine a correlation matrix (Table 9). If correlations are r≥0.80 then we may have a problem, but no such strong relationship among the explanatory variables have been detected.

Table-5: collinearity Analysis of predictor variables versus CB

Model	Variables*	Tolerance	VIF	Eigenvalue	Condition Index
1	Gender	0.90	1.11	3.67	1.00
	Age	0.74	1.36	1.65	1.49
	Education	0.71	1.41	1.28	1.70
	Occupation	0.87	1.16	1.15	1.79
	Income	0.82	1.22	1.11	1.82
	Season	0.93	1.08	1.03	1.89
	Perception	0.57	1.75	0.97	1.95
	Belief	0.70	1.43	0.85	2.08
	Brand Recognition	0.65	1.55	0.84	2.09
	Convenience	0.45	2.21	0.71	2.27
	Marketing Strategy	0.50	2.00	0.68	2.33
	Health and Quality	0.72	1.38	0.54	2.62
	Price	0.67	1.50	0.44	2.89
	Packaging Design	0.61	1.65	0.43	2.93
	EKAS	0.73	1.36	0.37	3.16
	Consumption Behavior			0.31	3.47

*Note: * The predictor variables are Z-scores*

Chapter Four – Result and Interpretation

4.1 Descriptive Analysis

Descriptive statistics of the scales, as indicated in Table-6, shows that the maximum and minimum mean values of the predictor variables are 2.98 and 3.33 respectively. The means are less scattered because the standard deviation of all the means are less than 1 (SD < 1). The descriptive statistics of the demographic and preferred BW brands are reported in the next subsections.

Table-6: Scale Descriptive Statistics, N = 171

Variables	*Mean*	*SD*	*Min*	*Max*
Perception	3.33	0.67	1.30	4.89
Belief	3.21	0.61	1.50	4.50
Brand Recognition	2.98	0.80	1.00	5.00
Convenience	3.09	0.85	1.00	5.00
Marketing Strategy	3.05	0.79	1.00	4.67
Health and Quality	3.11	0.82	1.14	9.57
Price	2.91	0.77	1.00	4.80
Packaging Design	3.03	0.79	1.00	5.00
EKAS	3.02	0.67	1.43	4.71
Consumption Behavior	3.24	0.64	1.56	5.00

Note: SD – standard deviation, *EKAS –* Environmental knowledge and Alternative Source

4.1.1 Demographic Characteristics of Respondents

As indicated in Table-7, the participants of the study are 171 individuals, in which gender distribution shows that males (52.0%, n = 89) were slightly higher than female. Around than 90% of the participants from two age categories (24 -29 years and 30 - 35 years) and the rest of the participants are from the two extreme (youngest and oldest) age categories. Educationally, high school, first degree and diploma (vocational), take 75%; whereas, the rest are Master's and PhD holders. Whereas, occupational wise, except two unemployed individuals, public recruits, self-recruits and business owners and students and part-timers take almost equivalent a third each.

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Similarly, the prevalence of monthly income of respondents is more concentrated in three main salary ranges from 2000 to 8000 Birr that account to 80% of the participants, while three individual are in the lower income rank and 24 individuals are acquire 8000-10,000 birr monthly.

Table-7: Demographic Profile of Respondents, N = 171

Variables	Description	n	%	Variables	Description	n	%
Gender	Male	89	52.0	Season	Rainy season	4	2.3
	Female	81	47.4		Dry season	84	49.1
					Always Same	81	47.4
Age	18 - 23 year	8	4.7	Education	Secondary School	2	1.2
	24 -29 years	73	42.7		First Degree	61	35.7
	30 - 35 years	73	42.7		Vocational/Trade	63	36.8
	36-55 years	17	9.71		Master's or Above	44	25.1
Occupation	Not Employed	2	1.2	Income	≤ 1,000 Birr	3	1.8
	Self-Employed	21	12.3		1,000 to 2,000	10	5.8
	Have own Business	3	1.8		2000 to 4000 Birr	25	14.6
	Private Recruit	37	21.6		4000 to 6000 Birr	67	39.2
	Public Recruit	64	37.4		6,000 to 8,000	45	26.3
	Other*	42	24		8000 to 10, 000	21	12.6

Note: * The majority are students and part-timers workers

4.1.2 Prevalence of Consumer Preferred Brands

The participants have been presented with list of 28-bottled water brands in order to choose their favorite brands. Consequently, the most favorite brands selected by 40% (n=70) respondents are "Aqua-Addis" and "Yes", while the next favorite brands that has been chosen by about 10 to 30 % respondents were Abyssinia, Gift, Eden and Fikir in their decreasing rate. The least favorite brands with nil score were Viva and MY-R and bottled water pairs of brands Family/Real and

Oasis/ Telil got 1 and 2 scores respectively. As demonstrated in Table-8 below, the rest of the brands have been chosen by range of respondents that vary from 3% to 30%.

Table-8: Prevalence of consumer preferred bottled water brands, N = 171

Brand Name	Yes		No	
	n	*%*	*n*	*%*
*Aqua-Addis / Yes**	67	39.2	104	60.8
Abyssinia	49	28.7	122	71.3
Gift	36	21.1	135	78.9
Eden	34	19.9	137	80.1
Fikir	33	19.3	138	80.7
One	28	16.4	143	83.6
Arki	25	14.6	146	85.4
Aqua-Safe	21	12.3	150	87.7
Origin	17	9.9	154	90.1
Ambassador	17	9.9	154	90.1
Diamond	13	7.6	158	92.4
Hiwet	12	7.0	159	93.0
*/ Agmas**	13	7.6	158	92.4
Wow	12	7.0	159	93.0
Classy	9	5.3	162	94.7
Daily	8	4.7	163	95.3
Springs	7	4.1	164	95.9
Agerie/ Cheers / Crystal / Other /*	5	2.9	166	97.1
Promise/ Kool	4	2.3	167	97.7
*Family/ Real**	2	1.2	169	98.8
*Oasis/ Telil**	1	0.6	170	99.4
*Viva/ MY-R**	0	0	171	100

Note: * These frequencies mean that each of bottled water brands have equal rates.

4.2 Effect of Demographic Factors on Consumption Behavior

Preliminary correlation test between the demographic variables (except for Occupation categories show significant indirect significant relationship with consumption behavior (r = -0.16, p = 0.047) and consumption behavior showed no statistically significant output. Further variance analysis

using independent t-test and ANOVA tests have not detected significant difference among the categories of the demographic variables. Therefore, independent t-test of means comparison between male and female respondents showed that gender has no influence on the consumption behavior of bottled water. Similarly, One-way ANOVA variance analysis among the categories age groups, education levels, occupational types, income categories and seasonal varieties on BW behavior did not show statistically significant difference in their behavior of bottled water consumption.

Table – 9: Correlation matrix of variables

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
1 *Gender*	1														
2 *Age*	-.15	1													
3 *Educ.*	-.05	.37**	1												
4 *Occup*	.102	.00	.01	1											
5 *Income*	-.16*	.13	.13	.25**	1										
6 *Season*	.01	.03	.16*	.01	-.07	1									
7 *Percep*	-.03	-.18*	-.08	.062	-.035	-.13	1								
8 *Belief*	.05	-.17*	-.10	.03	-.01	-.05	.44**	1							
9 *BR*	.10	-.10	-.07	-.09	-.05	-.01	.37**	.23**	1						
10 *Conven*	.02	.07	-.07	-.01	-.11	-.05	.47**	.40**	.52**	1					
11 *MS*	-.03	.02	.10	.05	-.11	-.00	.52**	.32**	.40**	.61**	1				
12 *HQ*	-.07	-.09	-.05	.04	-.09	-.00	.34**	.27**	.17*	.37**	.39**	1			
13 *Price*	-.01	-.10	-.01	.10	-.13	.00	.33**	.22**	.31**	.31**	.34**	.24**	1		
14 *PD*	-.01	-.08	.11	-.03	-.06	-.05	.40**	.34**	.32**	.35**	.36**	.38**	.50**	1	
15 *EKAS*	-.06	.03	.21**	-.02	.07	-.03	.13	.30**	.23**	.19*	.16*	.26**	.32**	.38**	1
16 *CB*	-.05	-.05	-.15	*-.16**	-.14	-.08	.13	*.22***	.14	*.23***	.11	*.17**	*.30***	.10	*.32***

Note: *. Correlation is significant at the 0.05 level and **. Correlation is significant at the 0.01 level (both 2-tailed). **BR** – Brand Recognition; **Conv.** – Convenience; **MS** – Marketing Strategy; **HQ** – Health and Quality; **PD** – Packaging Design; **EKAS** – Environmental Knowledge and Alternative Source; **CB** – Consumption Behavior.

4.3 Hierarchical Regression Analysis of Factors against Consumption Behavior

After checking the assumptions of multiple regression (as explained section 3.6), to test the hypotheses of the study detailed above hierarchical regression analysis was employed. The criterion variables - demographic, marketing and environmental factors - have been entered into the regression model using the "Enter" method in their respective order and the consumption behavior as dependent variable. The 'Enter' method allows the researcher to control how variables are entered into the model. At the simplest level all the variables could be entered together in a single group called a "block". This makes no assumptions about the relative importance of each explanatory variable, however variables can be entered in separate blocks of explanatory variables. In this hierarchical regression method the researcher entered explanatory variables into the model grouped in four blocks (demographic, psychological, marketing and environmental factors) in order of their theoretical relevance in relation to the outcome. This means that examining the influence of several predictor variables in a sequential way, such that the relative importance of a predictor may be judged on the basis of how much it adds to the prediction of a criterion, over and above that which can be accounted for by other important predictors. Decisions about the blocks have been made based on previous research and theoretical reasoning. Generally, knowing the precise order of importance is not possible, which is why variables that are considered of similar importance are entered as a single block. Enter includes all variables in the specified block while remove removes all variables in the specified block (Foote, 2011; Kotler, 2008; Kotler & Amstrong, 2010).

Accordingly, the hierarchical analysis includes four blocks, demographic variables (Genderr, Age, Education, Occupation, Income, and Season); psychological factors (Perception and Belief);

Marketing factors (BR, Convenience, MS, HQ, Price and PD) and EKAS factors as block1, block2, block3 and block4 respectively in with their theoretical importance. Once the blocks of variables entered in to the model according to their model orders, each R^2 and F-ratio changes were retained after entering each block of variables into the model in order to understand the percentage of contribution to the model. Finally, the standardized beta coefficients (β –values) of all variables in the last model (i.e. step 4) are retained in accordance with their respective t-test output at $p \leq 0.05$, in order to examine the predicting power of each predictor variable. The output of the hierarchical analysis are displayed and interpreted in the next subsections.

4.3.1 Relationship between Psychological factors and BW Consumption Behavior

Correlation analysis between psychological factors (Perception and Belief) indicated that beliefs of respondents have statistically significant correlation coefficient with their consumption behavior with ($r = 0.22$, $p = 0.01$). However, perception of respondents did not show significant relationship with the respondents buying behavior of bottled water.

Further hierarchical regression in step-2 (after controlling the influence of demographic variables) indicated that R^2-change $= 0.028$, $p = 0.1$ with F-Change $(2, 152) = 2.35$, $p > 0.05$; though psychological factors (perception and belief) contribute about 2.8% but due to $p > 0.05$, their contribution is statistically insignificant. Consequently, examining the significance of the standardized coefficient (β), it shows that both does not predict consumption behavior (Table-10).

4.3.2 Relationship between Marketing Factors and BW Consumption Behavior

As indicated in the correlation matrix between marketing factors and consumption behavior; convenience, price and HQ (health and quality) showed significant correlation coefficients, r: 0.30,

0.23 and 0.17 in their decreasing order with p = 0.01 for the former two and p = 0.05 for HQ respectively. In contrast, relationship analysis of respondents' consumption behavior with BR, MS and PD have not produced statistically significant correlation coefficients. Furthermore, the hierarchical regression analysis (step-3) on the relationship between marketing factors and consumption behavior demonstrated that marketing factors also influence consumption behavior by contributing around 9.2 % to the model with R^2-change = 0.092, and F-Change (6, 146) = 3.056, p = 01. Out of the six predictor dimensions of marketing factors, only Price ($\boldsymbol{\beta = 0}$.26, t = 2.90, p = 0.01) and Packaging Design ($\boldsymbol{\beta}$ = -0.197, t = -2.14, p = 0.05) have significant predicting power on consumption behavior of participants.

4.3.3   Relationship of Environmental Awareness with BW Consumption Behavior

Environmental Awareness has the largest relationship coefficient (r = 0.32, p = 0.01) in comparison to the other factors. As indicated in the hierarchical regression model output, environmental factors contribute about 5.5% due to the R^2-change 0.055 at statistical significance p = 0.01. Additional examination of the standard coefficient shows that environmental awareness and alternative sources have statistically significant predicting power on respondents' consumption behavior with ($\boldsymbol{\beta}$ = 0.275, t = 3.28, p = 0.01.

Table-10: Hierarchical regression analysis of predictor variables against consumption behavior

Independent Variables	Dependent Variable: Consumption Behavior					
	R^2	R^2-Change	F-Change	df	β	t
***Step-1* Demographic Factors**	**0.081**	**0.081***	**2.251***	**(6, 153)**		
Step-2 Psychological Factors	0.109	0.028	2.351	(2, 152)		
Step-3(Marketing Factors)	**.208**	**.092***	**2.79***	**(6, 145)**		
Step-4 Environmental Aw.	**.256***	**.055***	**10.72****	**(1, 144)**		
Zsc: Genderr					-.033	-.443
Zsc: Age					.026	.312
Zsc: Education					-.154	-1.798
Zsc: Occupation					**-.170***	**-2.20***
Zsc: Income					-.094	-1.19
Zsc: Season					-.062	-.84
Zsc: Perception					-.007	-.08
Zsc: Belief					.069	.81
Zsc: BR					-.051	-.57
Zsc: Conv					.147	1.38
Zsc: MS					-.075	-.74
Zsc: HQ					.050	.596
Zsc: Price					**.255**	**2.90****
Zsc: PD					**-.197**	**-2.14***
Zsc: *EKAS*					**.275**	**3.28****

Note: ***** Significance level at 0.05; ****** Significance level at 0.01

Chapter Five – Discussion, Limitation and Recommendation

5.1 Discussion

Findings of the study indicated that some dimensions of the demographic factors (occupation), psychological factors (belief) and marketing factors (convenience, HQ and price) as well as environmental factors have statistically significant relationship with consumption behavior of BT consumers. Analysis of the influence of demographic factors on CB did not show statistically significant impact on respondents' BW consumption. Four step hierarchical regression analysis of the four major factors on CB of respondents indicated that apart from psychological factors; demographic, marketing and environmental factors contributed 8.1% (p = 0.05), 2.8% (05) and 9.2% (0.01) to the model in predicting the CB of consumers respectively. Further examination of the regression model indicated that Occupation, (β = 0.255, t = -2.20, p = 0.05), Price (β = -.170, t = 2.90, p = 0.05), Packaging Design (β = -.197, t = --2.14, p = 0.05) and environmental knowledge and alternative sources (β = .275, t = 3.28, p = 0.01) have assured that these four dimensions predict consumption behavior of BW consumers. Despite significant bivariate correlation of with CB, dimensions such gender, age, education, income, season, perception, belief, brand recognition, convenience, marketing strategy, health and quality do not predict the CB of BW consumers. Furthermore, out of 28 brands of BW presented to respondents, the most consumer favored brands were Aqua-Addis" and "Yes and the least preferred brands were Viva and MY-R.

==Some results of the current study are consistent with previous empirical studies, whereas, some are inconsistent.== As Durga (2010) claimed that research results about bottled water differ ==geographically and culturally, in which empirical study reports show different results==. For example, two studies on influence of demographic variables on bottled water consumption

behavior reported opposing effects, a study result in Ghana indicated that demographic factors do have direct influence on CB of bottled water, whereas, a study in Wisconsin, USA (Eftila, 2009) demonstrated, similar to the result of current study (with the exception of occupation), education, demographic characteristics and family circumstances were not significant determinants of individual's willingness to pay for bottled water consumption. Furthermore, a study by Khan, Khan, Khan and Chaudhry (2014) showed that age, gender and household size were not significant variables to influence the CB of BW consumers. Therefore, understanding the influence of demographic variables on the consumption behavior of bottled water consumers need contextual and detailed examination in all environments and cultures with representative and sufficient sample size.

The marketing factors - Convenience, HQ and Price - have statistically significant bivariate correlation with consumer CB of BW, but regression analysis confirmed that price and packaging design predict the future buying behavior of customers. Several studies have mixed reports regarding influence of marketing factors on buying behavior of BW consumers. For example, Nielsen Company (2015) reported that reasons for consumers switching stores are price and quality (55%), convenience (46%) in their decreasing order of influence. Maria (2000) in her study on the market scope of mineral water has revealed that consumer preference of mineral water was different from individual to individual and her study showed that businessmen go for higher price brand with good quality, the common man goes for minimum price with good quality with less consideration of brand. Despite the limitations in sample size and its representativeness, the study revealed that price and PD have significant influence on consumption behavior of BW consumers. However, we cannot generalize that health and quality doesn't affect their buying behavior of BW because as long as quality and availability of tap water is limited in Addis Ababa population,

==consumers are forced to consume bottled water as an alternative of tap water, that makes difficult to make comparable analysis with BW.==

Despite, the variations of correlation between psychological factors – perception was not significant but belief is has been significantly correlated with CB of participants. Moreover, hierarchical regression analysis indicated that psychological factors are not determinants of consumers' behavior towards BW buying. In contrast to the current finding, the same research in Ghana found a relationship between perception and beliefs with bottled water usage; however, other studies (McKissock & Morgan, (2007) research also show that dimensions of psychological factors vary in their influence towards consumers buying behavior. Gauraj 's (1996) study showed that marketing strategies such as increasing the demand of existing customers by aggressive advertising; stimulating interest of potential buyers and going in for additional channels and product developments (providing water in different variants. Sasirega and Reddy (1999), also reported in their study of consumer perception of packaged drinking water, respondents used packaged drinking water for health purposes, for its ease to use, due to employer's demand and better quality in delivery and presence of salt in domestic water. Unexpectedly, Yasar (2011) study in Pakistan showed that the community was unaware of the quality of water they were drinking. Therefore, current study's output not showing statistically significant predicting power of HQ, MS, BR and Convenience could be due to participants less individual differences and scarcity of alternative tap water that makes drive them to get available water.

Finally, EKAS showed that as consumers of bottled water become more knowledgeable on the environmental awareness, they consume more bottled water, which is consistent with most previous study reports. Andey, and Kelkar (2009) indicated that irregular and intermittent supply

of municipality water is insufficient for allowing consumers to fully meet their water demands and they purchase more bottled water. Pintar et al. (2009) reported that in many instances, the consumption of bottled water is higher in communities where the alternative water sources (i.e. tap water) is of poor quality or scarce, though they have higher environmental awareness. However, in the developed world, studies (Chen, Zhang, Ma, Liu and Zheng, 2012; Pintar et al., 2009) reported that the consumption of bottled water is decreasing with increased environmental awareness and plenty of high quality tap water available.

As the review of empirical evidence showed that the bottled water consumption has been increasing from time to time and the current study's consumption behavior mean value (M = 3.2) indicated that most of the participants agree with consumption of bottled water nevertheless the individual difference in the volume of consumption.

5.2 Limitations of the Study

Despite the research report might provide important insights and understandings of the factors that influence the consumption behavior of bottled water consumers, it is not without some critical limitations. The current study has two major limitations. First, the minimum sample size (n = 384) was not fulfilled due the fact that the questionnaire contains too much items (5-pages) respondents were reluctant to commit their time in filling the questionnaires. The second limitation of the study is unable to translate the questionnaire into Amharic due to limited time and resources. As a result, the data gathering has been restricted to collect data from participants who are fluent and can easily understand English and that is why the minimum educational background of the participants (except two individuals - high school) is diploma holders (i.e. Vocational/Trade).

5.3 Recommendations

As discussed in the literature review, except in few developed countries, generally studies show the consumption of BW is increasing exponentially. In addition to the factors discussed in this study, the rise in BW consumption might have several reasons related to lack of holistic licensing and environmental policies and continuous desire of investors to engage in the BW industry are not only damaging underground water source and polluting the environment but also they discourage drinking water providing stakeholders. Therefore, in order to utilize our resources with efficiency and to protect the environment, the stakeholders (regulation agencies and policy makers) need to work with cooperation and integration. Besides, parallel with these efforts, environmental awareness activities and provision of standard drinking water to the society might help to shift tax payers' money to other crucial community projects and to replenish the deteriorating environment.

Furthermore, the researcher recommends that the results of the current study must be interpreted with great care and specifically to the current respondents as well as Addis Ababa residents with commendable English language ability. Furthermore, the current result might give general picture of the factors that affect the behavior of BW consumers, but future comprehensive and well-funded research projects are required. Besides, additional factors such as psychological factors (motivation, attitude and learning), cultural backgrounds and others must be included as predictor variables.

Chapter Six – Conclusion

6.1 Conclusion

Bivariate correlation analysis of respondents' data showed that occupation, belief systems, convenience, HQ, Price and EKAS have showed statistically significant relationship with CB of participants. Furthermore, the study confirmed that partial dimensions of the demographic factors (occupation), psychological factors (belief) and marketing factors (convenience, HQ and price) as well as environmental factors have statistically significant predicting power on consumption behavior of BT consumers. Therefore, despite the limitations related with sample size and data collection methods, the study will provide practical contribution to BW manufactures and purified water providers. Furthermore, the study could also enrich the existing theoretical knowledge on consumption behavior of Ethiopian consumers in general and consumption behavior of BW consumers in particular.

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Addis Ababa University
School of Graduate Studies
Department of Marketing Management

Appendix-A: Self-Report Questionnaire

Dear Consumers,

My name is Ruth Kassaye and I am writing my master thesis in marketing and management, on the bottled water industry. As part of my thesis I need to gather some data on bottled water consumption or purchasing behavior. I would greatly appreciate if you take the time to answer a few questions. It will take about 7-10 minutes. Thus, your genuine response is very important to achieve the intended objective of this study. All the responses you have provided will be kept confidential and they will not be used for the other purpose other than for the intended objectives of this study.

In advance, I thank you so much for your support!

General Instructions: Please read each item carefully and mark the appropriate space or write your response in the appropriate space. Please respond to all statements.

Part I Demographic Information

1. Gender- put a √ mark in one of the given boxes:

☐ **Male**   ☐ **Female**

2. Age: put a √ mark in one of the boxes given that contains your age range

☐ 18 - 23 years   ☐ 24 -29 years   ☐ 30 - 35 years   ☐ 36-41 years

☐ 42 - 47 years   ☐ 48 - 53 years   ☐ 54 - 59 years   ☐ ≥ 60 years

3. Level of Education- put a √ mark in one of the given boxes:

☐ Primary School (1-8)   ☐ Secondary School (9-12)   ☐ First Degree

☐ Vocational/Trade (12+1-3))   ☐ Master's Degree   ☐ PhD or Above

4. Occupation: put a √ mark in one of the boxes with alternative that suits you:

☐ Not Employed ☐ Student ☐ Self-Employed ☐ Have own Business

☐ Private Recruit ☐ Public Recruit ☐ Other_____

5. Income: put a √ mark in one of the boxes with monthly income that apply to you:

☐ ≤ 1,000 Birr ☐ 1,000 to 2,000 Birr ☐ 2000 to 4000 Birr

☐ 4000 to 6000 Birr ☐ 6,000 to 8,000 Birr ☐ 8000 to 10, 000 Birr

☐ 10, 000 to 15,000 Birr ☐ 15,000 to 20,000 Birr ☐ > 20,000 Birr

6. Season: Please put a √ mark in one of the boxes with the season you drink more bottled water:

☐ Rainy season ☐ Dry season ☐ Always similar

Part II: Statements related to the factors that influence the consumption of bottled drinking

First, please look at carefully the abbreviations for the five scales/degrees given in the first table. Then, please indicate the scales how you agree or disagree with the following statements by putting a √ mark in one of the abbreviations given for the five scales against each statement in the second table below.

Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
SD	D	N	A	SA

Factors affecting consumers choice						
No.	**Psychological Factors**					
Perception		SD	D	N	A	SA
1	I think bottled water tastes better than tap water					
2	Bottled water is better than domestic drinking water because it doesn't have strange taste					
3	I prefer bottled water due to clarity when visually checked than tap water					
4	I trust the source of water of the brand is more reliable than others and tap water					

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5	I drink bottled water because it suits my lifestyle					
6	I drink tap water because it suits my lifestyle					
7	I drink bottled water because it suits my diet					
8	I prefer bottled water since it is a good alternative to other drinks					
9	I prefer brand of BW because it is very convenient than others					
10	I prefer a brand because it has attractive appearance than other brands					
Beliefs, I believe that….		SD	D	N	A	SA
1	Bottled water is safer than tap water in Addis Ababa					
2	Bottled water has higher quality standards than tap water					
3	Bottled water is healthier than tap water in Addis Ababa					
4	Bottled water is healthier than fruit juices					
5	Bottled water is healthier than carbonated drinks (soft drinks)					
6	The quality of bottled water in Addis Ababa is reliable					
7	Tap water in Addis Ababa is safe					
8	There is no considerable difference between bottled and tap water in Addis Ababa					

Marketing Factors

	Brand Recognition	SD	D	N	A	SA
1	I prefer the brand of bottled water by its color					
2	I prefer the brand of bottled water by its Size					
3	The brand is easily recognized from the package					
4	I prefer the brand of bottled water by its Size					
5	I distinguish the symbol or logo of my favorite brand of bottled water easily					
6	If you were to drink bottled water, choose from below the brand(s) you prefer (circle all that you prefer)?					

1. **Abysinia**	11. **Daily**	21. **One**
2. **Agerie**	12. **Diamond**	22. **Origin**
3. **Agmas**	13. **Eden**	23. **Promise**
4. **Ambassador**	14. **Fam**	24. **Real**
5. **Aqua Addis**	15. **Fikir**	25. **Springs**
6. **Aqua Safe**	16. **Gift**	26. **Telil**
7. **Arki**	17. **Hiwet**	27. **Viva**
8. **Cheers**	18. **Kool**	28. **Wow**
9. **Classy**	19. **MY-R**	29. **Yes**
10. **Crystal**	20. **Oasis**	30. **Other_____**

Convenience		SD	D	N	A	SA
1	I prefer bottled water because it is comfortable to carry it					
2	Bottled water is fresher than tap water					
3	I feel comfortable consuming bottled water because it is easily accessible					
4	It is easy to find a drinking tap water source where I work/study					

	Marketing strategy				
1	I buy bottled water brands because friends and family recommends it				
2	I prefer a bottled water brand that broadcasts additional incentives				
3	I prefer a bottled water because Addis Ababa water agency is not trustworthy in providing safe tap water for drinking				
4	I prefer a bottled water brand that has higher media coverage				
5	I prefer the brand endorsed by celebrity that are more trusted.				
6	I prefer a bottled water brand that provides information on safety of the product				
	Health and Quality				
1	I use bottled water is safe to drink because it does not contain toxic chemicals				
2	I think bottled water has better quality because it is well disinfected				
3	I believe bottled waters and tap water have the same quality				
4	I drink tap water because I think the plastic bottle of bottled water contains toxic chemicals				
5	I prefer a brand of bottled water with standard quality of mineral content				
6	I prefer a brand BW with less chemical contaminants				
7	I drink BW because there is risks of bacterial contamination if the amount of chlorine in tap water decreases				
	Price				
1	I prefer a bottled water brand if its price is cheaper				
2	I prefer the best brand bottled water whatever its price				
3	I consume any available bottled water because all have similar price				
4	I prefer tap water because it is cheaper than bottled water				
5	I prefer bottled water because its cost matches its health benefit				
	Packaging design				
1	Color of package gain my attention at the point of purchase				
2	I buy the product that its package is convenient for me to carry				
3	I buy mineral water product because of package rather than the test				
4	I am a person who usually fall in love at sight with the products in the shops				
5	It is hard for me not to buy the nice packaged products				
6	Package design is the important criteria when I decide to buy mineral water for others				
	Environmental knowledge and Alternative Source				
1	I drink tap water because the bottles leach toxic chemicals that harm the environment				
2	I prefer tap water is better because the regulation of tap water is stricter than that of bottled water				

3	I prefer tap water because bottled water generates more waste than tap water					
4	I prefer tap water because produces less waste than bottled water					
5	I drink bottled water because it comes from natural sources and is therefore purer and fresher than tap water					
6	Over pumping of aquifers for producing bottled water has led to lowering of underground reserve					
7	I do not prefer bottled water because it generate more waste than tap water					

Part III: Statements related to quantity and frequency of the bottled water consumption behavior

First, please look at carefully the abbreviations for the five scales/degrees given in the first table.

Then, please indicate the scales how you agree or disagree with the following statements by putting

a √ mark in one of the abbreviations given for the five scales against each statement in the second

table below.

Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
SD	**D**	**N**	**A**	**SA**

	Consumption Behavior	SD	D	N	A	SA
1	I buy one or more bottles per day					
2	I buy 4-6 bottles per week					
3	I buy 1-3 bottles per week					
4	I buy 1-3 bottles per Month					
5	I buy 4-6 bottles per Month					
6	I mostly drink tap water					
7	I drink bottled water sometimes					
8	I drink any available water					
9	I drink bottled water in the absence of tap water					
10	I drink bottled water always					

Thank You Again for Participating!

Appendix -B: Full Regression Output Data

Model Summary[e]										
				Std. Error	Change Statistics					Durbin-Watson
Model	R	R Square	Adjusted R Square	of the Estimate	R Square Change	F Change	df1	df2	Sig. F Change	
1	.285[a]	.081	.045	6.07596	.081	2.251	6	153	.041	
2	.330[b]	.109	.062	6.02303	.028	2.351	2	151	.099	
3	.448[c]	.201	.124	5.81973	.092	2.789	6	145	.013	
4	.506[d]	.256	.179	5.63391	.055	10.723	1	144	.001	1.932

ANOVA[a]						
Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	498.590	6	83.098	2.251	.041[b]
	Residual	5648.354	153	36.917		
	Total	6146.944	159			
2	Regression	669.129	8	83.641	2.306	.023[c]
	Residual	5477.815	151	36.277		
	Total	6146.944	159			
3	Regression	1235.895	14	88.278	2.606	.002[d]
	Residual	4911.049	145	33.869		
	Total	6146.944	159			
4	Regression	1576.248	15	105.083	3.311	.000[e]
	Residual	4570.696	144	31.741		
	Total	6146.944	159			

Coefficients[a]											
	Unstandardized Coefficients		Standardized Coefficients			Correlations			Collinearity Statistics		
Model	B	Std. Error	Beta	t	Sig.	Zero-order	Partial	Part	Tolerance	VIF	
1 (Constant)	29.595	.481		61.527	.000						
Zscore: Genderr	-.404	.494	-.065	-.817	.415	-.057	-.066	-.063	.949	1.054	
Zscore: Age	.169	.521	.028	.324	.747	-.044	.026	.025	.826	1.211	
Zscore: Education	-.942	.540	-.151	-1.744	.083	-.168	-.140	-.135	.806	1.240	
Zscore: Occupation	-.842	.498	-.136	-1.689	.093	-.175	-.135	-.131	.921	1.086	

	B	Std. Error	Beta	t	Sig.	Zero-order	Partial	Part	Tolerance	VIF
Zscore: Income	-.832	.519	-.132	-1.602	.111	-.169	-.128	-.124	.883	1.133
Zscore: Season	-.472	.489	-.076	-.964	.337	-.093	-.078	-.075	.961	1.041
2 (Constant)	29.586	.477		62.029	.000					
Zscore: Genderr	-.409	.492	-.066	-.831	.407	-.057	-.067	-.064	.942	1.062
Zscore: Age	.355	.526	.058	.675	.501	-.044	.055	.052	.794	1.259
Zscore: Education	-.897	.536	-.143	-1.674	.096	-.168	-.135	-.129	.805	1.242
Zscore: Occupation	-.873	.495	-.141	-1.763	.080	-.175	-.142	-.135	.917	1.090
Zscore: Income	-.812	.516	-.129	-1.574	.118	-.169	-.127	-.121	.880	1.137
Zscore: Season	-.387	.490	-.063	-.790	.431	-.093	-.064	-.061	.940	1.064
Zscore(PerceptionTot)	.097	.541	.015	.179	.858	.102	.015	.014	.794	1.259
Zscore(BeliefTot)	1.039	.539	.164	1.928	.056	.181	.155	.148	.815	1.227
3 (Constant)	29.555	.461		64.106	.000					
Zscore: Genderr	-.326	.484	-.053	-.674	.501	-.057	-.056	-.050	.908	1.102
Zscore: Age	.191	.528	.031	.363	.718	-.044	.030	.027	.738	1.355
Zscore: Education	-.595	.540	-.095	-1.101	.273	-.168	-.091	-.082	.740	1.352
Zscore: Occupation	-1.124	.492	-.182	-2.286	.024	-.175	-.186	-.170	.867	1.153
Zscore: Income	-.478	.514	-.076	-.931	.353	-.169	-.077	-.069	.826	1.210
Zscore: Season	-.490	.476	-.079	-1.030	.305	-.093	-.085	-.076	.932	1.073
Zscore(PerceptionTot)	-.325	.609	-.052	-.533	.595	.102	-.044	-.040	.584	1.712
Zscore(BeliefTot)	.852	.546	.134	1.560	.121	.181	.128	.116	.741	1.349
Zscore(BRTot)	-.046	.562	-.007	-.082	.935	.122	-.007	-.006	.660	1.516
Zscore(ConvTot)	.886	.682	.143	1.299	.196	.209	.107	.096	.453	2.209
Zscore(MSTot)	-.652	.651	-.105	-1.001	.318	.080	-.083	-.074	.503	1.988
Zscore(HQTot)	.587	.522	.097	1.123	.263	.149	.093	.083	.744	1.345
Zscore(PriceTot)	1.943	.558	.311	3.483	.001	.284	.278	.259	.692	1.444
Zscore(PDTot)	-.990	.596	-.157	-1.662	.099	.071	-.137	-.123	.619	1.616
4 (Constant)	29.585	.446		66.272	.000					

Zscore: Genderr	-.208	.470	-.033	-.443	.659	-.057	-.037	-.032	.902	1.108
Zscore: Age	.159	.511	.026	.312	.755	-.044	.026	.022	.738	1.356
Zscore: Education	-.961	.535	-.154	-1.798	.074	-.168	-.148	-.129	.707	1.414
Zscore: Occupation	-1.051	.477	-.170	-2.204	.029	-.175	-.181	-.158	.865	1.156
Zscore: Income	-.591	.499	-.094	-1.186	.238	-.169	-.098	-.085	.822	1.216
Zscore: Season	-.387	.462	-.062	-.838	.404	-.093	-.070	-.060	.928	1.078
Zscore(PerceptionTot)	-.047	.596	-.007	-.078	.938	.102	-.007	-.006	.572	1.747
Zscore(BeliefTot)	.440	.543	.069	.810	.419	.181	.067	.058	.702	1.425
Zscore(BRTot)	-.315	.550	-.051	-.573	.567	.122	-.048	-.041	.645	1.551
Zscore(ConvTot)	.908	.661	.147	1.375	.171	.209	.114	.099	.453	2.209
Zscore(MSTot)	-.467	.633	-.075	-.737	.462	.080	-.061	-.053	.499	2.004
Zscore(HQTot)	.306	.513	.050	.596	.552	.149	.050	.043	.723	1.384
Zscore(PriceTot)	1.597	.550	.255	2.901	.004	.284	.235	.208	.667	1.500
Zscore(PDTot)	-1.246	.582	-.197	-2.141	.034	.071	-.176	-.154	.608	1.646
Zscore(EKASTot)	1.716	.524	.275	3.275	.001	.298	.263	.235	.734	1.362