

A study on the influence of Bottled Water consumption in the Hotel Industry- Reference to Batticaloa District, Sri Lanka

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Abstract: The hotels choose to use bottled water for drinking purpose related to various reasons such as health and safety, convenience, taste, brand recognition, reasonable price and consumer preference. The geographical locations too influence the distributional pattern of bottled water in the means of urbanization and tourism. However, the growth and popularity represent success for the bottled water industry; it forces a serious impact upon the environment. A survey was designed to study the influence of different aspects and its relationship in the hotel management in choosing bottled water in order to fulfil their customers' drinking water need and the geographical influence in the consumption pattern in the hotels of Batticaloa District. Perceptual study was conducted to evaluate the attitude of the respondents towards the bottled water. The Study was conducted in selected 6 Divisional Secretariat Divisions which are well known for its urban and tourist activities. Among the respondents, around 93% use bottled water for the drinking purpose for the ceremonies, professional programs and official meetings held in hotels. The consumption was adapted due to the reasonable price (13%), no need to carry (20%), hardness of the source water (13%) and taste better (13%). However, 73.3% of the hotels have the alternative water sources for their drinking purposes including private well (73.3%), tube well (46.7%) and water supply (13.3%). Correlational studies revealed that, a positive relationship can be observed in some factors influencing the bottled water consumption in hotels. Using chi square test in the perceptual studies, results indicated that there was no significant association in the use of alternative water sources, environmental concerns and taste with overall perception in consumption of bottled water. However, strong association was obtained between perception of health and safety and price and convenience in the consumption of bottled water in hotel industry.

Keywords: Alternative water sources, health, hotels, bottled water, perception, taste, quality.

INTRODUCTION

As living organisms, human beings cannot exist without water [1]. Water is a major component of bodily cells, tissues and fluids. It plays a vital role in biological processes such as temperature maintenance and nutrient transportation [2]. Nowadays, water has been degraded due to the nation's developmental activities such as constructions, renovations, etc. Therefore, people adopt different techniques to upgrade the quality from the level of availability. Even though one can satisfy daily drinking water requirements solely from tap water, more and more people are reaching for less environmental friendly alternative – bottled water [3] even it is harmful to the environment.

Consumers choose to drink bottled water for variety of reasons including brand recognition, portability and health [1]. Studies have shown that increased consumption of bottled water is related to a negative consumer perception of tap water quality [4]. Furthermore, other studies have shown that bottled water consumption is related to demographic factors such as race, income, gender and differences in water

system quality between rural, suburban and urban areas [5].

Tourism has been rated as the 4th largest foreign exchange earner and the contributor to the GDP in the Sri Lankan economy. The direct contribution of Travel & Tourism to GDP was 4.8% and the total contribution of Travel & Tourism to GDP was 11.1% in 2014 [6]. The hotel sector is one of the attractive targets for water conservation and consumption in terms of bottled water. Hotels are mostly recognizable to the public and are sensitive to public perception. The Hotel and Tourism industry broadly consists of three sub sectors namely, Accommodation, Restaurant and Travel. The Accommodation sub sector consists of Hotels, Heritage Homes, Guest Accommodation units, etc. Fast Food Restaurants and Take Away Food sales outlets have become very popular recently which is a convenient solution to the problem of supplying food in a modernized society. Therefore, the consumption pattern of bottled water in a hotel can be influenced by the seasonality due to tourist arrivals and climatic variation [7].

The trend of using bottled water is increasing in the Eastern Province in last few years due to the tremendous development in hotels and tourism in the Eastern Province. This is also supported by the New York Times (2016) where the East coast of Sri Lanka has been selected as the 41st place among 52 popular places to be visited in 2016 for its elegant beaches, hospitality places and famous tourists' hotels.

Objectives of the study

The present study was mainly focused the different aspects and perception of the hotel management in choosing bottled water in order to fulfil their customers' drinking water need, identify factors

associated with increased water use at specific hotels, and the geographical influence in the consumption pattern in Batticaloa District.

METHODOLOGY

Data collection and analysis

A baseline study was conducted with the main bottled water agencies in the District to find out the geographical distribution pattern in the district. Based on the data 6 DS Divisions named as Koralai Pattu, Koralai Pattu North, Manmunai Pattu, Manmunai North, Kattankudy and Eravur Pattu were selected for the study which is dominant in urbanization and tourism in Batticaloa [8] which is shown is figure 1.



Fig-1: Geographical sites of bottled water distribution in Batticaloa

A pre-designed semi-structured questionnaire was distributed among the hotels to understand the view and perception of the respondents regarding the bottled water consumption in 2015. The survey was carried out in a random sampling method with the sample size of 25. The registered hotels in the Sri Lankan tourist board were considered in the study and they were selected in the category of Hotels, Heritage Homes, Guest Accommodation units and Fast Food Restaurants. Each hotel is considered as a respondent for the questionnaire study.

Basic details of hotels, branded preference, factors influencing the consumption of bottled water, consumer demands, alternative water sources and recycling methods were gathered in the survey. Perceptual study was conducted from the hotel owners by asking statements related to the bottled water consumption in the hotels. Likert scale (1-5 scale) was used to measure the statements and average overall perception was calculated. Collected data were entered in the MS Excel (2010) and analyzed via the SPSS (Version 22) in order to obtain the valid percentage of each attributes. Correlational studies were conducted to examine the relationship of the above variables with the

consumption of bottled water in the hotels. Chi square test was carried out to check the significant association between the overall perception and related factors.

RESULTS AND DISCUSSIONS

Basic information of the hotels

The study was mainly focused on 6 DS divisions which are more dominant in urbanization and tourism where the supply and demand was considerably higher to bottled water. Randomly selected 25 registered hotels in these DS divisions were included in the study. Based on the survey, the hotels were categorized under the category of Hotels with accommodation (67%), small and medium resorts (20%) and Restaurants (13%), respectively. Further, the ownership of the hotels was identified as private (27%) and company (73%) with the location of urban (33%) as well as tourism (67%) spots in the Batticaloa District. It meant that the hotels and its locations were mainly targeted to the tourist's spots where the concentration of the tourist (both local and foreign) arrival for the holidays is higher.

Preference on bottled water

The study revealed that all the hotels and resorts use bottled water for the consumption of the customers due to the willingness and brand recognition of the customers which is included in their hotel charges. Figure 2 reveals the instances where the

bottled water used in hotels. Among the respondents, around 93% bottled water used for the drinking purpose of their customers used in the ceremonies (73%), professional programs (67%) and official meeting (7%) occurs in their hotels.

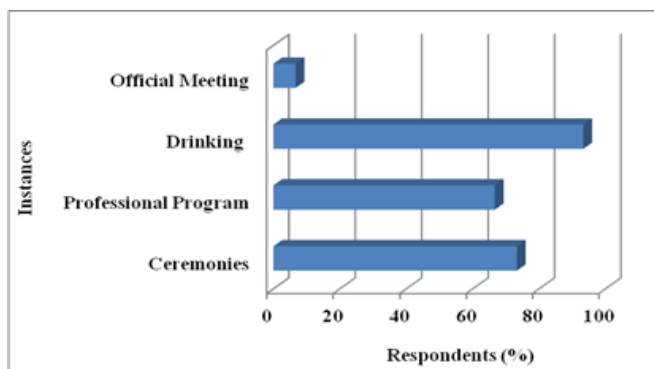


Fig-2: Instances of using bottled water in hotels

Around 87% of the hotels use 1500 ml of bottled water which are in demand in these areas. The baseline study (Dasinaa and Delina, 2015) also shows the similar results where the distribution of 1500ml bottles are high compare to other volume bottles. This is followed by 1000ml (67%), 500ml (13%) and 20l (7%), respectively used in the hotels for various purposes. Further, the different volume of the bottled water consumption had the positive significant relationship with the ownership pattern (private, partnership and company) of the hotels ($P < 0.01$, $r = 0.684$).

per day is 3 litres. However, the average stay (Days) of tourists in these popular area has been increased from 8 to 10 during the period of 2008 and 2014, respectively [9].

The present study shows, that most of the people who accommodate in hotels, resorts and restaurants use more than 13 water bottles per week for their drinking purposes (93.3%), because of their long drive from native places (both local and foreign customers) and the concern in proper structured facilities especially in their health concerns during the visit of Sri Lanka. This is also supported by the survey report (2015) of tourism authority, Sri Lanka, where, the tourist consumption in bottled water grew at 35% over the three years (2008-2011) period, to 26 million litres in 2011 and the average stay for a tourist in 2011 was 10 days. The average tourist consumption of water

The respondents were encouraged to list out the reasons for the preference on using bottled water (Figure 3) in their hotels. Majority of the respondents (87%) mentioned that they preferred water bottles due to convenience. It is also mentioned by Ferrier [4] as one of the major reasons for consumers choose the bottled water is the convenience in handling. Bottled water may be very useful and handy in times or places where tap water is unavailable or of bad quality. Since then, the demand for bottled water has been increasing, even in places where tap water is safe to drink [10]. The results obtained from the questionnaire survey indicates that 80% of the respondents mentioned about their concern in health which is also indicated by Ferrier [4] where the consumers are very health conscious, so they perceive bottled water as safer and of better quality. Therefore, it took major role while comparing with other reasons such as reasonable price (13%), No need to carry (20%), hardness of the source water (13%) and taste better (13%).

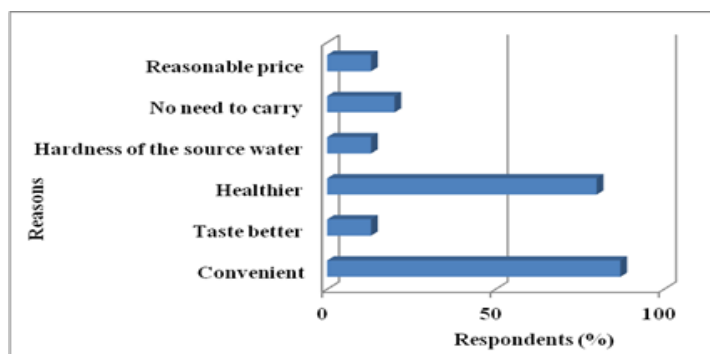


Fig-3: Reasons for adapting bottled water

According to the results, factors influencing on adapting bottled water was significant with the relationship ($P < 0.01$) of reasons for choosing bottled water for their domestic purposes. It was positive and the relationship was $r = 0.828$ specially related to the branded recognition and price variation of the bottled water.

The results indicated that the participants who thought that bottled water was safer than tap water drank more bottled water than the participants who thought that tap water was equally as safe as bottled water. However, none of the participants thought that tap water was safer than bottled water. Similarly, 46% of participants indicated that they believed bottled water was safer than tap water and 66% indicated that they believed bottled water tasted better than tap water.

Influence of seasonality

Seasonality depends on the tourist arrivals and climatic variation in the study area. Bottles were mainly consumed in dry season (73%) where the tourist arrival is high. The availability of the water as well as the reduction of water column in private wells too causes the people to move towards the fast consumptions of the bottled water particularly in dry zone. Around 26.7% of the respondents mentioned that they use bottled water in both seasons (dry and wet) especially in wet due to the ground water pollution due to flood threat in the study location. However the seasonality doesn't give any significant impact in the usage of bottled water by the hotels, mean the demand to the bottled water seems to be all around the year in the hotels.

Quality of the water

Quality of the water is another aspect determines all the functional activity of the system. Therefore, the trustiness on selling goods with the best quality is considered a lot where 46.7% of the respondents believed that the quality of the bottled water is the right way to determine the purchasing. More than half of the respondents (80%) in the study area depend on the suppliers in acceptable distances. For the successful supplying, price determination should be in an acceptable way. At the present study, more than 86.7% of the respondents accepted the price used to sell the mineral water bottle at the identified locations.

Recycling methods

Although the waste from the bottled water is harmful to the environment, many consumers used to drink it instead of tap water. Environmental concerns of reusable bottled water are necessary to protect the nature from the pollution due to delayed decaying of the plastic bottles. Alternative ways were chosen by the respondents in the disposal of the used bottles from the hotel level. As the accumulation of the water bottles in

the hotel sites due to the one time usage of un-reusable water bottles, more than 80% of the respondents expressed that they send off their wastages of the bottles to the dumping sites. Only very few adapt burning (6.7%) procedures and recycling (6.7%) for their gardening purposes.

Information on other water sources

In this analysis, people were thoroughly checked with their alternative water sources except bottled water. The results show that the sources include private well (73.3%), tube well (46.7%) and water supply (13.3%). Quality of the alternative water sources were in satisfaction level to the 80% of the respondents. Around 20% of the total mentioned that the level of water was under their satisfaction level which was due to the floating of the particles and colour of the water during the rainy season. It was the reason for the adaptation of the bottled water due to the inconvenience during the wet season.

Effect of overall perception on bottled water in hotel industry

A study was conducted to determine how the perception towards the bottled water influences the hotel industry. The hotel owners were examined by the statements related to the bottled water consumption in the hotels. Likert scale (1-5) was used to measure the statements (strongly disagree, disagree, not sure, agree and strongly agree) and obtained mean value for each statement.

The statements were designed to analyse the respondents' perceptions toward drinking bottled water via assessing presence and quality of alternative water sources, health and safety concern, taste, environmental concerns and price and convenience in selecting the bottles. Average mean score was calculated to obtain the overall perception value in the usage of bottled water. The following table shows (table 1) the mean values obtain for each statements from the respondents.

The majority of the responds to the above statements fall in the category of "Agree" with the scale point of 4. The average overall perception obtains from the study is also 4.08 and quartile analysis shows that 50% of the respondents fall below the average of 4.07 of the mean score. Based on the likert scale range the overall perception was categorized in to 2 groups such as "High perception", and "Very High perception" towards the bottled water consumption. Based on the survey results 50% of the respondents have high perception on using bottled water in their hotels for the consumption purpose of their customers.

Separate studies conducted by Ferrier [4] and Doria [5] have found that there is a relationship between bottled water consumption and perception of tap water quality, including both safety and taste.

Additionally, chi square analysis was carried out to check the significant of the association with the

following categories. The following contingency table 2 shows the values obtain from the chi square test.

Table-1: Average Mean Score for the Perception of Respondents

No	Statements	Average Mean Score
1	Bottled water is better than alternative water source because it doesn't have strange taste	4.1
2	It is healthier to drink alternative water source because it contains less toxic chemicals	4.3
3	Bottled water is safe to drink because it does not contain toxic chemicals	4.3
4	I like alternative water source more because it tastes better than bottled water	4.2
5	Un-reusable water bottles can pollute the environment	4.6
6	Drinking bottled water is not harming the environment because the bottles do NOT leach toxic chemicals	3.9
7	The quality of alternative water is better because the regulation of is stricter than that of bottled water	4.1
8	It is safer to drink bottled water because the water is sterilized thoroughly	4.2
9	Bottled water is more convenient	4.9
10	Alternative water source produces less waste	3.1
11	Bottled water generate more waste than alternative water source	2.9
12	Bottled water is more accessible than alternative water source	4.1
13	It is easy to find a drinking water source	4.3
14	Alternative water source water is cheaper than bottled water	4.3
15	Bottled water is not as expensive as alternative water source	4.0

(Adopted from Zeyu Yao, 2011) [11]

Effect of Perception of alternative water source on Bottled Water Consumption

The test indicated that the respondents also agree in using an alternative water source due to two reasons. More access and easy to find an alternative source. Statements 12 and 13 support the above fact. Around 60% and 40% of the respondents agree and strongly agree that they use alternative water sources in some instances and they adopt some water treatment methods such as boiling and filtering during the usage. Some consider drinking tap water as a health benefit because of its added fluoride content. However the chi square test doesn't show any significant association with the perception of towards the bottled water.

Effect of Perception of health and safety on Bottled Water Consumption

Statements 2, 3, 7 and 8 represent the above view on bottled water consumption. Results show that 90% and 10% of the respondents are agree and strongly agree with the health and safety in the bottled water due to its regulated process and sterility. Studies show that another consumer perception is that bottled water is safer than tap water [4]. The probability associated with the chi square statistic of 0.041 is less than .05 indicating there is a significant strong association between high and very high perception when they consider the health and safety.

Table-2: Percentages of factorial perceptions toward overall perception in bottled water

Categories		Overall Perception (%)		
		High Perception	Very High Perception	Chi-square Value
Alternative water source	Agree	60.0%	60.0%	1.000
	Strongly Agree	40.0%	40.0%	
Health & Safety	Agree	90.0%	60.0%	0.041
	Strongly Agree	10.0%	40.0%	
Taste	Agree	66.7%	40.0%	0.334
	Strongly Agree	33.3%	60.0%	
Environmental concern	Agree	90.0%	60.0%	0.067
	Strongly Agree	10.0%	40.0%	
Price & Convenience	Agree	70.0%	20.0%	0.041
	Strongly Agree	30.0%	80.0%	

(P<0.05)

Effect of Perception of taste on Bottled Water Consumption

Taste is one of the factors affecting the preference on bottled water selection. Statements 1 and 4 also prove that 66.7% and 33.3% of the respondents agree and strongly agree that bottled water doesn't show any taste difference even though the alternative water source has better taste, respectively. Studies show that consumers might drink bottled water because they believe it tastes better than tap water [4]. But the chi square test shows no significant association between the taste and perception towards the bottled water.

Effect of Perception on environmental concern on Bottled Water Consumption

Although the 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 [12].

In Batticaloa district, tourist arrival places are ensured for its aesthetic values where open dumping is limited. Recycled bottles causing health impacts were also expressed through advertisements in different channels. As the result, employees who work in tourist hotels and people who live in urban area are requested to collect used water bottle in proper way and separately. Statements 5, 6, 10 and 11 express the respondents' view in environmental concern on bottled water disposal. Majority (90%) of the respondents agree that un-reusable water bottles pollute the environment and aware about the leaching ability of the toxic chemicals they accept that natural water sources produce less waste than bottled water.

Effect of Perception on price and convenience on Bottled Water Consumption

Factors that influence whether tap water is consumed as drinking water include convenience, health and cost [4]. Reasonable price and convenience on the usage play a vital role in preferring bottled water consumption among the users. Around 80% of the respondents strongly agree that the bottled water is more convenient than other ways and not expensive to use regularly in hotels. The probability associated with the chi square statistic of 0.041 is less than .05 indicating there is a strong significant relationship between price and convenience in high and very high perception towards bottled water in hotel industry.

CONCLUSION

The findings of the study provide information on the factors that influence the bottled water usage in the hotel industry in Batticaloa District. The results revealed that many factors influence the consumption of bottled water in hotels with a positive relationship. Health and safety and Convenience play a major role in

influencing the bottled water and have strong positive relationship with the consumption in the hotel industry. Taste and reasonable price of the bottled water also show a moderate relationship. Seasonality of tourist arrival and climatic variation also influence the usage of bottled water in hotels but not significantly. The respondents show a positive remark in the environmental problems caused by the wastage in the bottled water and have knowledge about the recycling methods in the region.

Separate study was conducted to determine the perception of hotel respondents towards the bottled water consumption in their hotels using 5 point likert scale. The results show the overall perception falls into the category of "Agree" with the statements which lead to a positive perception towards the bottled water consumption in hotel industry. The probability obtained from chi square test shows a significant relationship in health/safety and price/convenience in the perception towards bottled water consumption. The tourism and urbanization also contribute a lot in the distribution of bottled water geographically in Batticaloa District.

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