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Original Research Article

Consumer Buying Behaviour Towards Energy Drinks in Malaysia

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Abstract: The busy lives of people worldwide have led to the production and consumption of convenient and readily available food and drinks which can satisfy the need for energy to go on. However, some claim that these processed consumables are not necessarily nutritious and sometimes even harmful to the body, especially energy drinks loaded with a vast amount of sugar. This paper investigates consumer buying behaviour towards consuming two types of energy drinks, i.e., artificial and herbal energy drinks. Questionnaire surveys were used to collect the data from 450 respondents among the urban area residents in Selangor and Kuala Lumpur. Chi-square analyses were conducted to see the relationship between the demographic profiles of consumer buying behaviour towards energy drinks, showing a significant value of .000 for artificial energy drinks and .023 for herbal energy drinks. Whilst factor analysis were run to examine the factors influencing consumer buying behaviour toward energy drinks. The data reveal that lifestyle, age, preferences, price, and customer trust impact consumers' energy drink purchasing decisions. To improve the production of herbal energy drinks so they may be sold at a reduced price, manufacturers should be honest about the ingredients of artificial or herbal energy drinks.

Keywords: Buying Behaviour; Energy Drinks; Artificial Energy Drinks; Herbal Energy Drinks; Consumer

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1. Introduction

Every movement that we make requires much energy. Energy is stimulated in many ways through adequate sleep, exercising, consuming the right food, and drinking enough water to supply appropriate vitamins and minerals to the body to enable it to function appropriately. However, due to the busy lifestyle that working people face daily, they usually

have no choice but to eat anything convenient, even if it does not provide adequate nutrients and energy. Thus, they would opt for food supplements to fill this nutrient gap.

According to the American Diabetes Association Guide to Herbs & Nutritional Supplements (ADAGHNS), food supplements can be divided into six categories: vitamins, dietary supplements, herbal medicine, amino acids and proteins, bodybuilding supplements and energy boosters. The ADAGHNS further categorizes energy boosters into two sub-groups, i.e., energy pills and energy drinks. Although consuming these supplements could aid in providing the body with appropriate nutrients and energy, some, if taken without precaution and knowledge, could be harmful to the body. This is especially true when certain products are mistakenly understood to provide healthy energy but only contain loads of sugar. Thus, this study aims to examine the consumer buying behaviours towards the subgroup of an energy booster, focusing on energy drinks (which comprise herbal drinks and artificial energy drinks) because these are the subgroups that are commonly mistakenly consumed.

2. Literature Review

2.1. Energy Drinks

A study showed that energy drinks are the most popular food supplement consumed to obtain energy (Meier, 2012). Energy enhancement products, especially energy drinks, come in various tastes, types, and content and from many brands. Among the typical ingredients in energy drinks are sweeteners, herbal extracts, amino acids, and caffeine (considered both a food additive and a drug by the US Food and Drug Administration (FDA)).

Energy drinks are also often mistaken for sports drinks, which enhance sports performance. Energy drinks may have caffeine and sweetness, impacting cognitive performance, such as increased attention and reaction speed due to caffeine or combined ingredients (Alford *et al.*, 2001). However, contrary to the study by Smith-McLallen (2012), there is little or no evidence that various other substances in energy drinks affect muscle strength, endurance, and human performance. Reissig *et al.* (2009) also stated that energy drinks had been associated with health risks, such as an increased rate of alcohol-related injury, and excessive or repeated consumption can lead to cardiac and psychiatric conditions.

2.1.1. Artificial drinks

Many artificial energy drinks considered food supplements are fortified beverages with added dietary supplements such as ginseng, guarana, bitter orange (Clauson *et al.*, 2008) and caffeine (Poulos & Pasch, 2016). Caffeine is known to treat migraine headaches and cure short-term drowsiness and fatigue (Sawynok, 1995). Guarana has been scientifically linked to increased energy, appetite suppression, and enhancement of athletic performance (Higgins *et al.*, 2010).

However, according to Clauson *et al.* (2008), energy drinks also can cause adverse effects on the human body, such as seizures. Drinking energy drinks combined with alcohol

could lead to psychiatric impacts, obesity, and death. An energy drink containing Sodium Chclohexanesulfamate or Siklamat (an artificial sweetener for food) can also cause bladder cancer, migraine, memory loss, insomnia, irritation, asthma, hypertension, allergic, impotent, and brain cancer. Furthermore, Pennington *et al.* (2010) also stated that heavy and excessive consumption of energy drinks could result in increased jitteriness, nervousness, dizziness, the inability to focus, difficulty concentrating, gastrointestinal upset, insomnia, dehydration, accelerated heart rates, anxiety, seizures, acute mania, and strokes.

Artificial energy drinks are often marketed as magical energy potions and as "cool" drinks endorsed by celebrities and athletic teams. Thus, it appeals to adolescents, college students and anyone who could use an energy boost (Lohse *et al.*, 2000). Consumers are attracted to energy drinks because they believe they are safe to consume due to their flashy packaging and easy availability at any grocery store or gas station (Ali *et al.*, 2010).

2.1.2. Herbal drinks

Herbal energy drinks are energy drinks produced from the absorption, infusion or decoction of herbs, spices, or other plant materials; they usually contain caffeine, are flavoured with fruit juice, and are marketed with organic certification (Zenith, 2003). Herbal tea is a mixture made from the leaves, seeds, and roots of various plants. For example, peppermint contains potent antibacterial and antiviral properties, antioxidant and anticancer properties and some antiallergenic potential (McKay & Blumberg, 2006). Organic tea, such as peppermint tea, benefits better than taking a vitamin pill or food supplement, aside from reducing hydration.

Several studies were done to study the relationship between herbal drinks and health, especially tea consumption. Evidence showed that green and black tea have anti-ageing, antidiabetic, and cancer-preventive effects as they contain polyphenolic compounds, which are associated with beneficial effects on the prevention of cardiovascular disease (Khan & Mukhtar, 2013). While Astragalus tea is used for its anti-inflammatory and antibacterial properties, Oolong tea is known to cure Type 2 Diabetes; Yerba matte tea contains full of vitamins A, B1, B2, and C, minerals magnesium, potassium, calcium, iron, and riboflavin that benefited in reducing the risk of cancers and heart disease. Generally, herbal teas are known to soothe the stomach and lower blood pressure (Ravikumar, 2014).

2.2. Consumer Buying Behaviour

A study by Hecht *et al.* (2020) has stated many reasons relating to consumer purchasing behaviour, such as product quality, product placement, price, and advertisement in stores or online. Understanding the nature of consumer purchasing behaviour has been the critical component of research in marketing, where anticipating customer reactions and influencing them is crucial in understanding their customers' and prospects' needs and motivations (McKechnie, 1992).

Consumer behaviour can be defined as the process and activity when consumers evaluate, purchase, or dispose of goods and services to satisfy their needs (Solomon *et al.*, 2012). It focuses on how "individuals make decisions to spend their available resources (time, money, effort) on consumption-related items" (Schiffman & Kanuk, 2000).

Individuals are different from one another and tend to do things for various reasons; thus, consumer buying behaviour is a complex discipline that must be well understood. The focus of this paper is to investigate consumer buying behaviour towards energy drinks. It also explores the consumer demographic profiles and their buying behaviour towards energy drinks while analyzing the significant relationship between socio-demographics and consumer buying behaviour towards artificial energy drinks and herbal drinks. Besides that, it also examines factors that may influence consumer buying behaviour towards energy drinks. This study will provide some insights into the food supplement industry, especially in the energy drinks industry, enabling the market to describe better and understand the consumer's characteristics. Furthermore, this study will aid in finding consumer needs and preferences for effective segmentation and product positioning.

Data from the United States National Center for Complementary and Integrative Health (NCCIH, 2018) shows that energy drinks-related emergency department visits have doubled from 2007 to 2011. For every 10 cases, at least one will be hospitalized. Drugs such as marijuana or over the counter or prescription medicines have been a common combination with these beverages, contributing to 42% of all energy drinks-related emergency department visits in 2011 in the United States. However, regardless of the harmful effects of these energy drinks, the sales were worth over $12.5 billion in 2012 based on Energy Drinks and Shots: U.S. Market Trends research report in 2018, showing that the market grew 60% from 2008 to 2012. It is forecasted to grow at a CAGR of 5.9% from 2019 to 2024.

This research adopted and modified the framework from Elliott *et al.* (2012), as seen in Figure 1. This research examines the effect of perceptual characteristics on energy drink buyers. Awareness, pricing, accessibility, and trust are perceptual sub-factors. Age, income, and lifestyle are evaluated for their influence on energy drink usage.

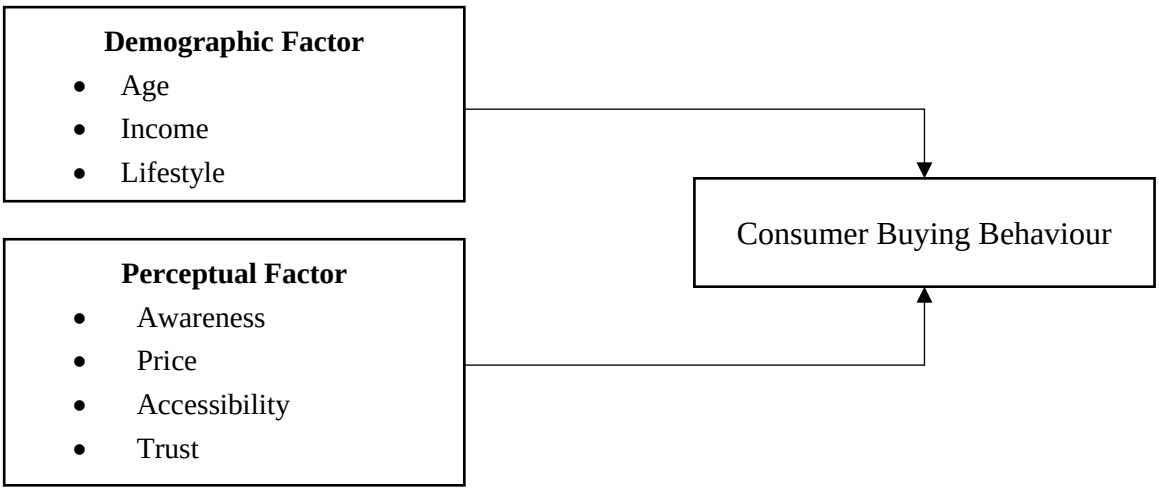


Figure 1. Factors Influencing Consumer Buying Behaviour of Energy Drinks
(Source: Adopted and Modified from Elliott *et al.* (2012))

2.2.1. Age

According to Schmitz (2012), consumer priority changes over age, where the need and desire for things change as humans age. He gives an example of spending five dollars, where children will choose to purchase toys and gifts and consider them essential, but as they grow older, their preferences change to food, which shows how human needs evolve.

2.2.2. Income

Hernández, Jiménez, & José Martín (2011) state that income is the definitive factor of consumer behaviour, where income represents the monetary and natural value that a person receives from other people or organizations for covering personal expenditures.

2.2.3. Lifestyle

Another factor is a lifestyle. It relates to how people live through the activities they engage in and the interests they express. In simple terms, it is what people or humans value in life. Lifestyle is often determined by how we spend our time and money (Prakash, 2010)

2.2.4. Awareness

Tsakiridou *et al.* (2008) found that awareness, availability, quality, and performance affect consumers' purchasing behaviour. Health and nutrition awareness gives them an advantageous position regarding purchasing power (Ali *et al.*, 2010).

2.2.5. Price

According to Hansen (2005), price is associated with intake and has been an important factor in purchase behaviour. In his case, the difference in product prices between local and foreign brands influences people's purchasing behaviour. This study will also measure the impact of prices on customer behaviour in purchasing energy drinks.

2.2.6. Accessibility

Accessibility of products plays an important role in consumers' behaviour in purchasing certain products. Chiciudean *et al.* (2012) found that the accessibility of organic food products influences consumer buying behaviour.

2.2.7. Trust

Guenzi *et al.* (2009) found that trust leads to a positive evaluation of products, and consumers are used to trusting something they can see, especially advertised. Trust is also crucial to building a long-term, lasting interaction between a company (retailer) and the customers (Kenning, 2008).

3. Methodology

The general public in Selangor and the Kuala Lumpur region were picked because they were active and busy, making them the perfect respondents. Four hundred fifty people responded to the study using a random sample approach, providing the primary data through self-administered questionnaires.

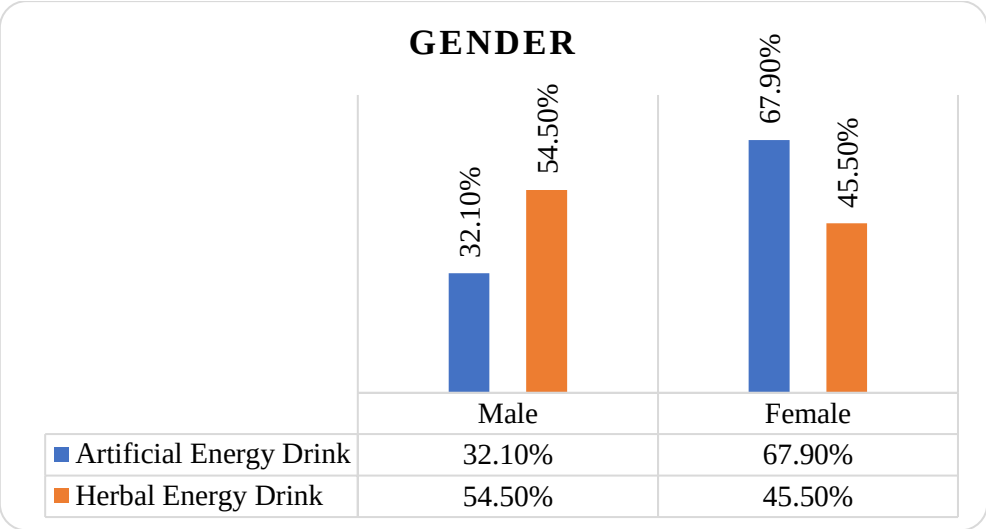
The questionnaire was created based on closed-ended and multiple-choice questions, with a Five-point Likert Scale represented by a statement of strongly disagree, disagree, neither agree nor disagree, agree, and strongly agree. The questionnaires were divided into a few sections containing demographic factors related to gender, race, status, age, education level, religion, occupation, monthly income, and lifestyle. One section tested the general knowledge and consumer buying behaviour towards energy drinks, and another focused-on perception factors such as awareness, price, accessibility, and trust that might influence consumer buying behaviour towards energy drinks.

This study's analysis includes descriptive statistics of each category in a demographic and socioeconomic variable in the study. Chi-square analysis was calculated to analyse the relationship between two variables, and factor analysis was used to identify the factors influencing consumer buying behaviour towards energy drinks.

4. Result and Discussion

The survey comprised 327 respondents for artificial energy drinks and 123 respondents for herbal energy drinks. The respondents' social-demographic characteristics were next examined, as shown in Figures 2 to Figures 9.

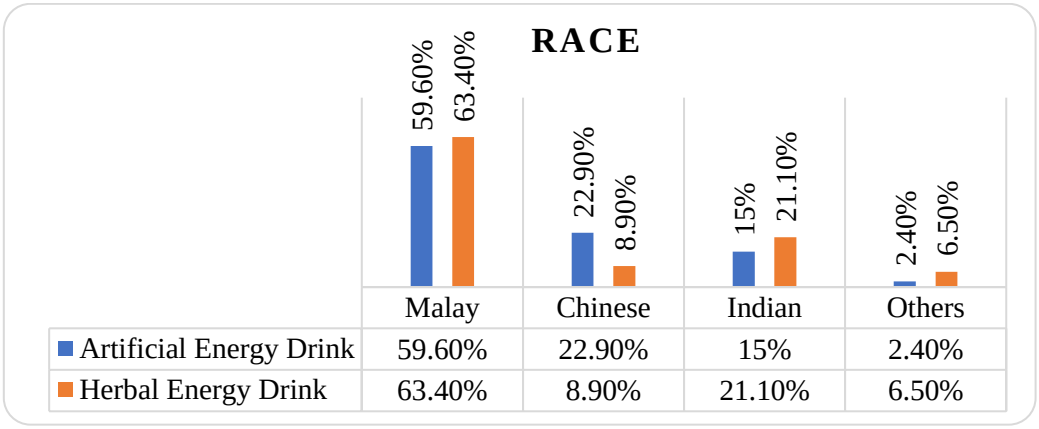
Figure 2 shows the consumer buying behaviour towards artificial and herbal energy drinks based on gender. Of the artificial energy drink category, from 327 respondents, about 67% (222) were female, and the other 32% (105) were male. Compared to the herbal energy drink, most respondents are male, 67 out of 123 (54.5%), while the other 56 are female (45.5%).



	Male	Female
Artificial Energy Drink	32.10%	67.90%
Herbal Energy Drink	54.50%	45.50%

Figure 2. Demographic Profile - Gender

The data collected in Figure 3 shows that most respondents are of Malay ethics, representing 195 of 327 (59.6%) respondents choosing artificial energy drinks and 78 of 123 (63.4%) choosing herbal energy drinks. Chinese respondents chose artificial energy drinks in 75 of 327 (22.9%), while only 11 123 (8.9%) chose herbal energy drinks. Of the Indian respondents who chose artificial energy drinks, 49 of 327 (15%) chose herbal energy drinks, while 26 of 123 (21.1%) chose herbal energy drinks. The number of other races who choose artificial and herbal energy drinks is the same, with 8 of 327 and 8 of 123 (2.4% and 6.5%) respondents, respectively.



	Malay	Chinese	Indian	Others
Artificial Energy Drink	59.60%	22.90%	15%	2.40%
Herbal Energy Drink	63.40%	8.90%	21.10%	6.50%

Figure 3. Demographic Profile - Race

Figure 4 shows that in the artificial energy drink category, single respondents are about 76% (249 of 327), while the other 23% (78 of 327) are married. Meanwhile, in the herbal energy drink category, respondents with a single status are 52% (64 of 123), and those with a married status are 48% (59 of 123).

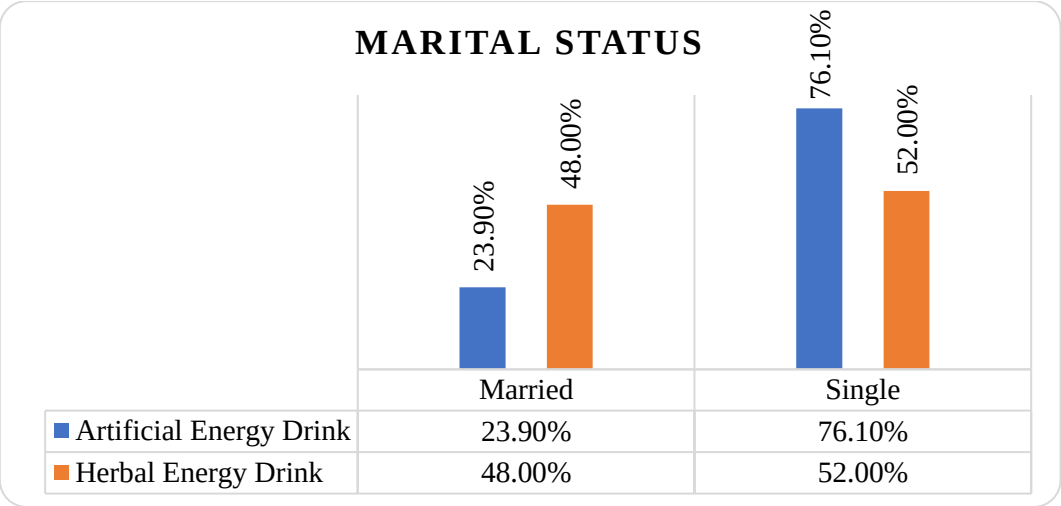


Figure 4. Demographic Profile – Marital Status

Figure 5 shows the age range of the respondents. Three hundred twenty-seven respondents chose artificial energy drinks, with the majority aged 21 to 40, making up about 76.5% (250 of 327). In contrast, the minority is aged 1 to 20, with only 46 respondents or 14.1% of the total respondents. The respondents' minimum age in this study is 12 years old, while the maximum is 50. The total number of respondents who chose herbal energy drinks is 123; most are 21 to 40 years old, comprising 86 respondents or 69.9%. The other 31 (25.2%) respondents are 41 years old and above; the rest are 1 to 20 years old.

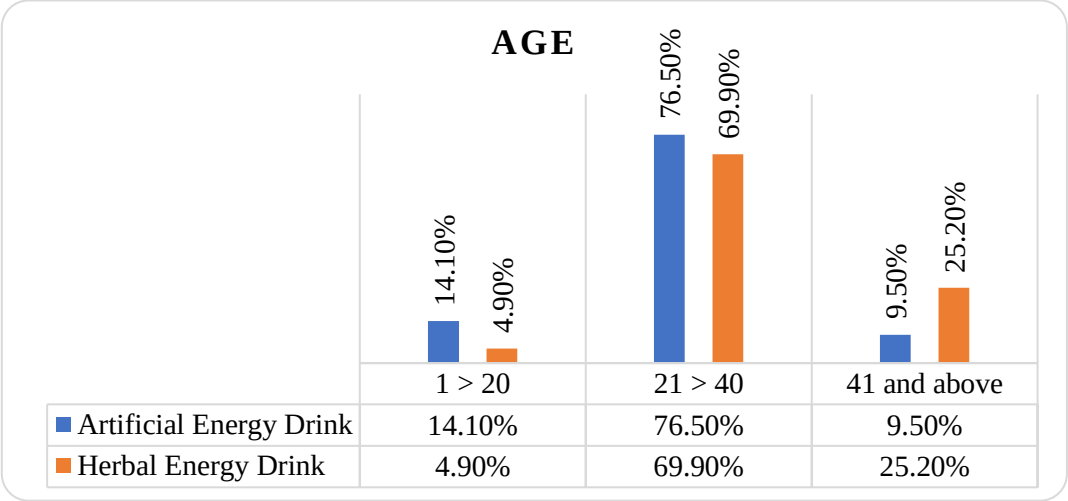
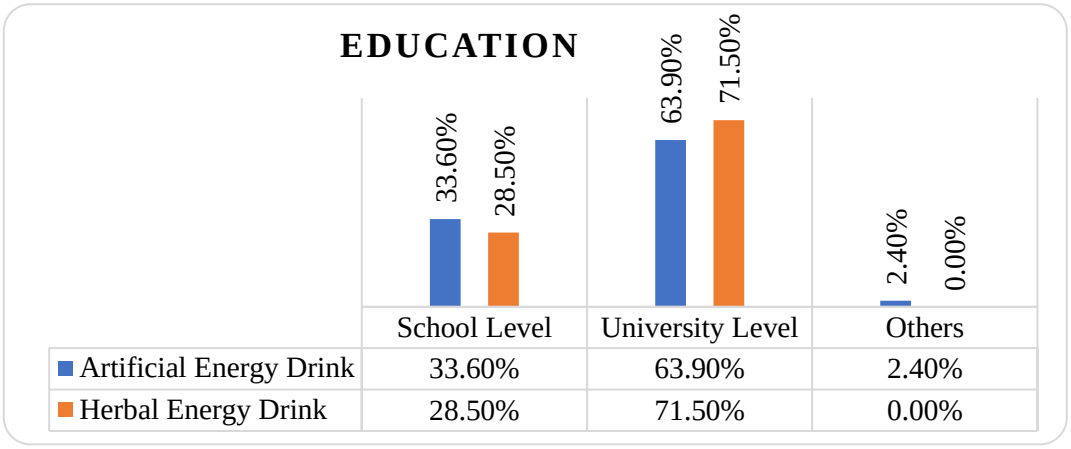


Figure 5. Demographic Profile – Age

In Figure 6, most respondents 209 of 327 respondents (63.9%) choose artificial energy drinks; 88 of 123 respondents (71.5%) choose herbal energy drinks and have graduated from the university. A few respondents have been educated until the school level, either from primary or secondary school. The other eight respondents, or 2.4%, that chose artificial energy drinks are from others; they are either from the outside Malaysia education

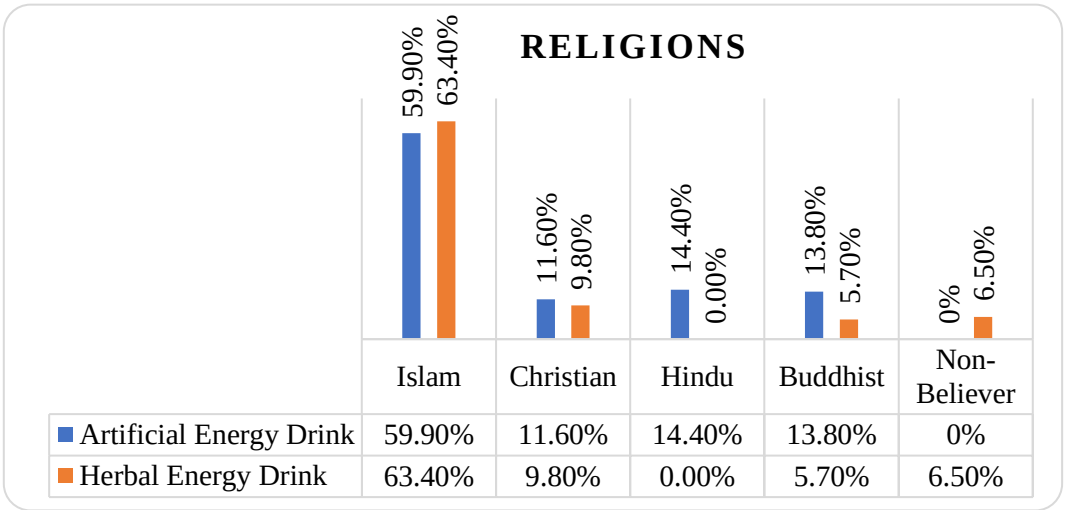
system or do not have any formal education achievement. None of the others chooses herbal energy drinks.



	School Level	University Level	Others
Artificial Energy Drink	33.60%	63.90%	2.40%
Herbal Energy Drink	28.50%	71.50%	0.00%

Figure 6. Demographic Profile – Education

In Figure 7, 196 of 327 (59.9%) Muslim respondents choose artificial energy drinks, while 38 (11.6%) Christian respondents, 45 (14.7%) Hindu respondents, and Buddhists are, 45 (13.8%). Respondents that choose herbal energy drink is 78 of 123 (63.4%) Muslim, 12 (9.8%) Christian, 18 (14.6%) Hindu, 7(5.7%) Buddhist, and 8 (6.5%) are an Atheist.

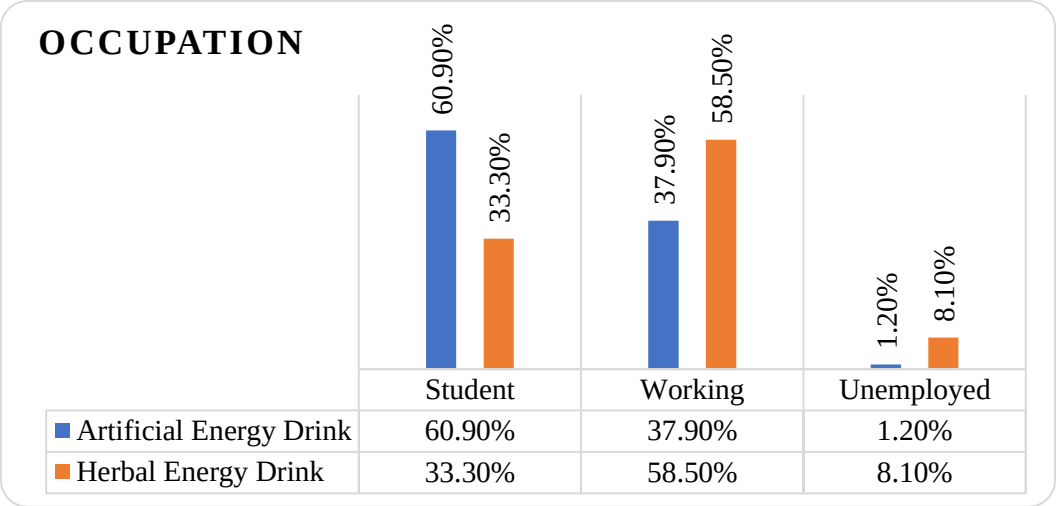


	Islam	Christian	Hindu	Buddhist	Non-Believer
Artificial Energy Drink	59.90%	11.60%	14.40%	13.80%	0%
Herbal Energy Drink	63.40%	9.80%	0.00%	5.70%	6.50%

Figure 7. Demographic Profile – Religions

Figure 8 shows that most respondents are still studying while the following are working, and the rest are unemployed. The number of respondents who are still students who choose artificial energy drinks is 199 of 327 respondents or 60.9%. The following respondents already in the working sector are 37.9% or 124 out of 327. Meanwhile, the rest

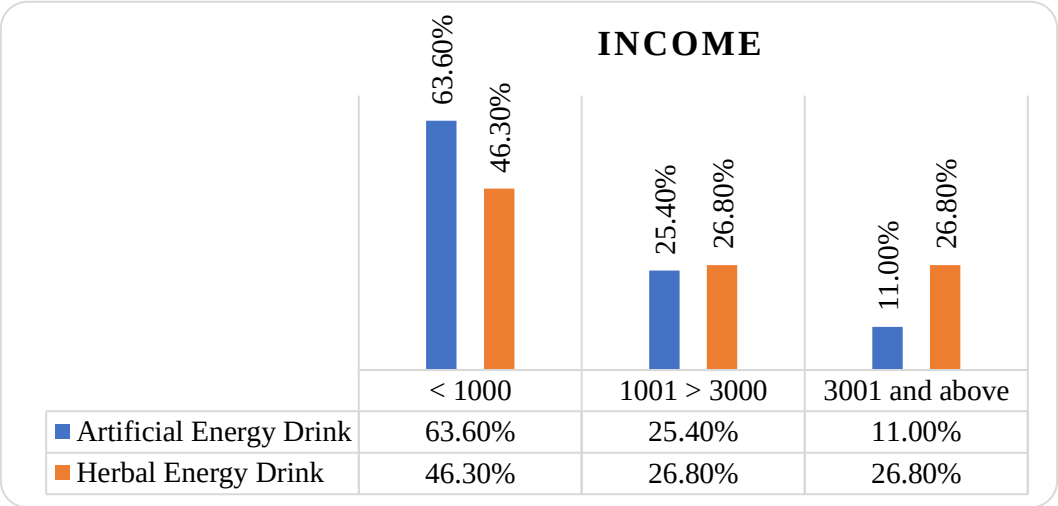
of the 3.1% is still unemployed. In the herbal energy drink category, 41 of 123 (33.3%) respondents are students, 72 (58.5%) are working, and 10 (8.1%) are unemployed.



	Student	Working	Unemployed
Artificial Energy Drink	60.90%	37.90%	1.20%
Herbal Energy Drink	33.30%	58.50%	8.10%

Figure 8. Demographic Profile – Religions

Figure 9 shows that most respondents have a monthly income below RM1000, representing that 208 of 327 (63.6%) respondents chose artificial energy drinks, and 57 of 123 (46.3%) chose herbal energy drinks. Of respondents with an income of around RM1001 to RM3000 who chose artificial energy drinks, 25.4% (83 of 327) and 26.8% (33 of 123) chose herbal energy drinks. Of respondents with more than RM3000 of their monthly income, 11% (36) chose artificial energy drinks, while the number of respondents who chose herbal energy drinks is 26.8% (33).



	< 1000	1001 > 3000	3001 and above
Artificial Energy Drink	63.60%	25.40%	11.00%
Herbal Energy Drink	46.30%	26.80%	26.80%

Figure 9. Demographic Profile – Income

The Cronbach's alpha value in Table 1 determines the reliability test for consumers' lifestyle, age, income, accessibility, consumer awareness, price, and trust towards their buying behaviour on energy drinks. Thus, this result shows that the model is fit for this study.

Table 1. Cronbach's Alpha Scores

Factors	Items	Cronbach's Alpha Scores
Lifestyle	4	0.844
Age	3	0.850
Preferences	4	0.752
Price	3	0.644
Thrust	4	0.852

The test result below indicated a similar relationship between socio-demographics and consumer buying behaviour towards artificial and herbal energy drinks. Based on the Chi-Square analysis in Table 2, the relationship between socio-demographic and consumer buying behaviour towards artificial and herbal energy drinks is that only age, marital status, education level, occupation, and monthly income are associated with consumer buying behaviour. This shows that gender, race, and religion do not affect consumer buying behaviour toward artificial and herbal energy drinks.

Table 2. Pearson Chi-Square on Artificial and Herbal Energy Drinks

Variables	Artificial energy drinks	Herbal drinks
	Pearson Chi-Square	
Age	.000	.023
Marital Status	.026	.000
Education Level	.081	.001
Occupation	.006	.001
Monthly Income	.001	.000
Gender	.917	.973
Race	.604	.530
Religion	.650	.181

Varimax Rotation of the consumer's response shows that only five latent factors influence consumer buying behaviour towards energy drinks. Table 3 below details the factors influencing consumer buying behaviour based on lifestyle, age, preference, price, and trust.

Table 3. Factor Loading and Variance on Consumer Buying Behaviour towards Energy Drinks

Items	Factor Loading				
	F1	F2	F3	F4	F5
Lifestyle					
Energy drinks are very consistent with my lifestyle.	0.764				
My diet affects my buying of energy drinks on the market.	0.781				
My religious values influence me to buy energy drinks on the market.	0.764				
My healthy lifestyle influenced me to buy energy drinks on the market.	0.832				
Variance (% explained)	**16.621**				
Age					
Due to the increasing age, I take energy drinks to get extra energy.		0.77			
Age factors influenced me to choose herbal energy drinks or artificial energy drinks.		0.866			
Due to age, I have switched from artificial energy drinks to herbal energy drinks.		0.806			
Variance (% explained)		**16.303**			
Consumer Preferences					
Artificial energy drinks easily seen and found in the store influence my buying factors.			0.85		
Artificial energy drinks are more easily found in stores or supermarkets.			0.755		
Advertisement issued by supermarkets and companies about energy drinks has influenced me to buy energy drinks.			0.743		
Information efficacy of energy drinks has influenced me to buy energy drinks.			0.532		
Variance (% explained)			**13.043**		
Price					
I prefer the cheaper energy drinks because I believe the quality is the same as an expensive product.				0.647	
I compare the price of certain brands of energy drinks with other energy drinks brands before buying.				0.715	
The price difference between artificial energy drinks and herbal energy drinks affects my choice to buy.				0.799	

Items	Factor Loading				
	F1	F2	F3	F4	F5
Variance (% explained)				**12.897**	
Trust					
If I buy an artificial energy drink, I will look for information related to the efficacy of the product before buying it.					0.725
If I buy a herbal energy drink, I will look for information related to the product's efficacy before buying.					0.834
If I buy artificial energy drinks, I will make sure there is a guarantee of the effectiveness of the product before buying.					0.844
If I buy herbal energy drinks, I will make sure there is a guarantee of the effectiveness of the product before buying.					0.867
Variance (% explained)					**10.587**
Total percentage of variance			**69.45%**		

Lifestyle is found to be the main factor that influenced consumer buying behaviour with the highest variance of 16.621%, followed by age with 16.303%, consumer preferences based on knowledge with 13.043%, price with 12.897% and the last factor is trusted with 10.587%. The total variance of factors influencing consumers' buying behaviour toward energy drinks is 69.451%. According to Pallant (2001), a value above Cronbach's Alpha of 0.6 is considered a high reliability and acceptable index. Therefore, Cronbach's alpha values for lifestyle (0.844), age (0.850), consumer preference (0.752), price (0.644) and trust (0.852). Respectively, these factors have a high impact on the consumption of energy drinks.

5. Conclusions

This study showed that most consumers prefer to buy artificial energy drinks (72.7%) compared to herbal energy drinks (27.3%) from the total of 450 respondents who participated in this survey. Factors that influenced the consumer buying behaviour towards energy drinks are mainly due to lifestyle (16.621%), age (16.303%), preferences (13.04397%), price (12.8%) and trust (10.587%), with total variance explained by factors of 69.451%. This study also found that age, marital status, education level, occupation and monthly income have a significant relationship with consumer buying behaviour towards artificial and herbal energy drinks.

Understanding customer demand is vital for the energy drinks sector (artificial and herbal). Producers should know where consumers prefer to buy a product and ensure accessibility at these places. It is also essential to provide comprehensive information and be transparent by giving complete and detailed information on the status of the energy drinks,

health claims, and expiration dates to ensure consumers' trust. Besides that, the producer should also consider the fair price for the energy drinks (i.e., herbal energy drinks vs artificial drinks) to ensure consumer affordability.

This study only focuses on respondents from two states in Malaysia; therefore, it is advisable to diversify the respondents from different states in Malaysia with different age groups and geographical locations for future study. As consumer preferences tend to change over time, this research focus should also be re-tested to gain up-to-date information on consumer buying behaviour preferences.

Author Contribution: Primary author, conceptualization, and methodology (Fazlin Ali, Muhammad Taufik Abdul Rahman), performed data collection (Muhammad Taufik Abdul Rahman), analysis (Omer bin Thabet), writing - review and editing (Zanurul Huzaima Zainudin)

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